Performance Measurement Report

Cohort I

1998-2000

Medicare Health Outcomes Survey

Centers for Medicare & Medicaid Services

Health Services Advisory Group

HEALTH SERVICES ADVISORY GROUP

Medicare Health Outcomes Survey
Cohort I Performance Measurement Report

EVALUATION AND FEEDBACK FORM

FAX BACK THIS FORM TO HSAG, ATTENTION: LAURA MORRISSEY GIORDANO AT 602-241-0757

The Centers for Medicare & Medicaid Services (CMS) and Health Services Advisory Group (HSAG) welcome your comments and feedback on this report. Please use the comment section below for your questions, comments, issues or concerns.

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In order to assure a complete and timely response, please complete the following information:

Name: _____ **Date:** _____

Title: _____

Organization: _____

If M+CO, Plan ID Number: _____

Phone Number: _____ **Fax:** _____

E-Mail: _____

Table of Contents

Reader's Guide:
How to Use this Report

- **What do Performance Measurement results mean?**
  Performance Measurement results reflect a health plan's ability to maintain or improve the physical and mental health functioning of its Medicare beneficiaries over a two year period of time.

- **Where can I find my plan level Performance Measurement results?**
  Performance Measurement results for all plans in **your** state are presented in the Executive Summary section (B) of this report.

- **How many beneficiaries participated in determining my plan level results?**
  The number of beneficiaries that participated in the Medicare Health Outcomes Survey (HOS) is summarized in the Distribution of the Sample and Response Rate sections of the Executive Summary (B).

- **How were my plan level results generated?**
  A complete summary of the data collection and analysis can be found in the Methodology section (D) of this report.

- **Where can I find additional plan level results?**
  Supplemental graphs of health status indicators and demographics at the plan, state, and national levels are available on the accompanying CD-ROM (J).

- **Which plans participated in Medicare HOS?**
  A complete list of the plans in HOS can be found in the Participating Plans section (F) of this report.

- **Who contributed to the development and implementation of the Medicare HOS?**
  A comprehensive list of the key organizations and individuals involved in HOS can be found in the HOS Partners section (I) of this report.

- **What if I encounter a term I do not understand?**
  A glossary consisting of definitions relevant to Medicare HOS can be found in the Definitions of Key Terms section (G) of this report.

- **What are some of the overall trends in HOS?**
  Pertinent trends and demographics are included in the National Trends section (E) of this report.

- **Where can I obtain additional technical documentation?**
  Additional detailed technical documentation describing the scoring and case mix adjustment used to generate the Performance Measurement results is currently under development. It is planned to be distributed to M+COs and PROs at a future date.

- **What survey questions were used in HOS?**
  A copy of the HOS questionnaire can be found in the NCQA HEDIS® 2000, Volume 6 Manual (H).

- **When will my organization receive beneficiary level data?**
  Beneficiary level data is planned to be distributed to M+COs and PROs in early 2002.

- **Who can I contact for technical assistance with this report?**
  The Medicare HOS Information and Technical Support Telephone Line (1-888-880-0077), as well as the HOS e-mail address (azpro.hos@sdps.org), are available to provide assistance with report questions and interpretation.

Executive Summary

The Centers for Medicare & Medicaid Services (CMS), formerly the Health Care Financing Administration, is committed to monitoring the quality of care provided by Medicare + Choice Organizations (M+COs). The Medicare Health Outcomes Survey (HOS) is the first health outcomes measure for the Medicare population in managed care settings. The HOS design is based on a randomly selected sample of individuals from each participating M+CO, and measures their physical and mental health over a two year period.

The HOS measure is an assessment of a health plan's ability to maintain or improve the physical and mental health functioning of its Medicare beneficiaries over a two year period of time. The functional status of the elderly is known to decline over such a period.[1] The HOS results were computed using a set of case mix/risk adjustment factors, adjusting for expected differences. The differences between the baseline and the two year follow up physical and mental health scores are presented in terms of the percentages of beneficiaries who were better, the same, or worse than expected. The resulting aggregation of these scores across beneficiaries within a plan yields the HOS plan level Performance Measurement results. These results are specific to each individual plan. HOS results will be an important part of CMS' quality improvement activities, as current law authorizes Peer Review Organizations (PROs) to review the quality of care provided to Medicare beneficiaries. The goals of HOS are to help beneficiaries make informed health care choices and to promote quality improvement based on competition.

PERFORMANCE MEASUREMENT RESULTS

The Performance Measurement results describe a change in health over time, which is characterized in terms of the direction and magnitude for all beneficiaries in a given plan. The results from this study describe the outcomes of a randomly selected set of members from each participating plan between 1998 and 2000. These results account for demographic and health differences that may exist between sets of members in the various plans. These results are not necessarily an indication of the outcomes a particular respondent may experience in the future. Plan performance may change over time, and individual outcomes depend on individual medical care and personal circumstances.

The HOS instrument consists of three components: the SF-36® Health Survey[2, 3]; questions for case mix and risk adjustment purposes; and questions added by CMS as required by the 1997 Balanced Budget Act. The Performance Measurement results are based on risk adjusted mortality rates, and changes in physical and mental functioning and well being, among living beneficiaries over the two year period. Physical and mental functioning and well being are measured with the Physical Component Summary (PCS) and Mental Component Summary

[1] National Committee for Quality Assurance. *HEDIS 3.0/1998, Volume 6: Health of Seniors Survey Manual*. Washington DC: NCQA Publication, 1998.
[2] SF-36® is a registered trademark of the Medical Outcomes Trust.
[3] Ware JE, Snow KK, Kosinski M, Gandek B. *SF-36® Health Status Survey Manual and Interpretation Guide.* Boston: The Health Institute, New England Medical Center, 1993.

(MCS) scores, which are derived from the SF-36®. Both PCS and MCS are calculated using the eight scales of the SF-36®: Physical Functioning (PF); Role-Physical (RP); Bodily Pain (BP); General Health (GH); Vitality (VT); Social Functioning (SF); Role-Emotional (RE); and Mental Health (MH).

Given that each responding beneficiary was measured twice (at baseline in 1998 and at follow up in 2000), each respondent serves as his or her own control. In order to facilitate accurate plan comparisons of health outcomes, the results are adjusted for a number of beneficiary characteristics at baseline, including age, gender, race, and chronic conditions.[4] The results of the risk adjusted outcomes are aggregated across respondents for each M+CO, yielding the plan level Performance Measurement results. For details on the derivation of Performance Measurement findings, please refer to the Methodology section (D) of this report.

The *Cohort I* Performance Measurement results are based on an analytic sample of 122,444 Medicare beneficiaries who were age 65 or older and for whom baseline physical and/or mental health measures could be calculated. The results are reported as the percentages of beneficiaries whose health status improved, remained the same, or declined. In the accompanying figures, these categories are referred to as percent better, percent same, and percent worse than expected. **Please note that the percentages in *all* of the Executive Summary figures may not total 100% due to rounding.**

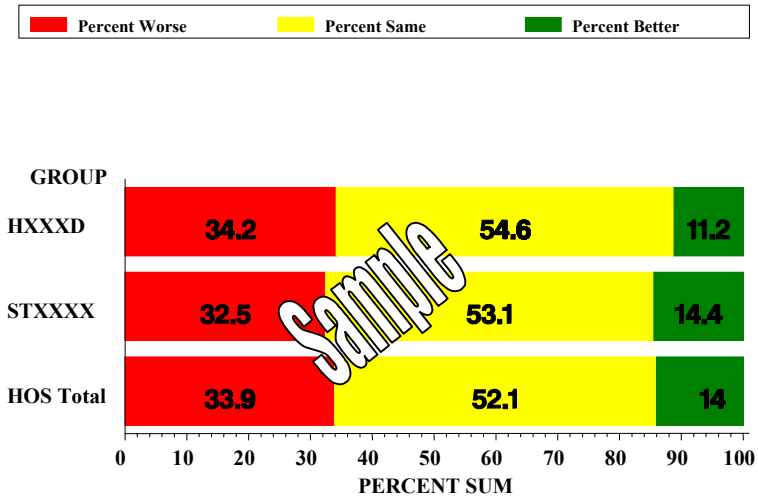
[4] National Committee for Quality Assurance. *HEDIS® 2000, Volume 6: Specifications for the Medicare Health Outcomes Survey*. Washington D.C.: NCQA Publication, 2000.

Physical Health

Performance Measurement results for physical health combine risk adjusted two year mortality rates and changes in PCS scores. A reliable and valid measure of physical health, very high PCS scores indicate no physical limitations, disabilities or decrements in well being, high energy level, and a rating of health as "excellent."[5, 6] Very low PCS scores indicate limitations in self care, physical, social and role activities, severe bodily pain, frequent tiredness, and a rating of health as "poor." The PCS score is highly correlated with the PF, RP, and BP scales. Beneficiaries were classified into three categories: alive and PCS better than expected; alive and PCS same as expected; and PCS worse than expected (including death).

The figure below depicts the national HOS total, state total, and plan level Physical Health Performance Measurement results. At the national level, 14.0% of beneficiaries were better than expected in terms of physical health (green), 52.1% remained the same as expected (yellow), and 33.9% were worse than expected (red) at follow up.

PHYSICAL HEALTH PERFORMANCE MEASUREMENT RESULTS FOR PLAN HXXXD, STXXXX TOTAL, AND HOS TOTAL

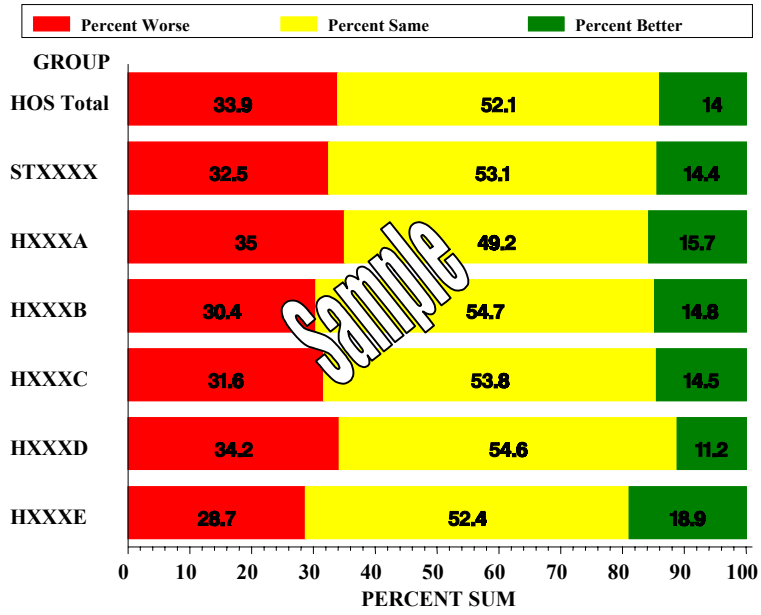


For purposes of comparison, the following figure depicts the plan level Physical Health Performance Measurement results for all plans in **your** state. The number of plans per state varies from one to 22, with larger states divided into their assigned geographic designations.

[5] Ware JE, Kosinski M, Bayliss MS, McHorney CA, Rogers WH, Raczek A. Comparison of methods for the scoring and statistical analysis of SF-36® health profiles and summary measures: summary of results from the Medical Outcomes Study. *Med Care* 1995; 33(Suppl. 4): AS264-AS279.

[6] Ware, JE and Kosinski, M. *SF-36 Physical and Mental Health Summary Scales: A Manual for Users of Version 1*, Second Edition, Lincoln, RI: QualityMetric, Inc., 2001.

PHYSICAL HEALTH PERFORMANCE MEASUREMENT RESULTS FOR ALL PLANS IN STXXXX, STXXXX TOTAL, AND HOS TOTAL

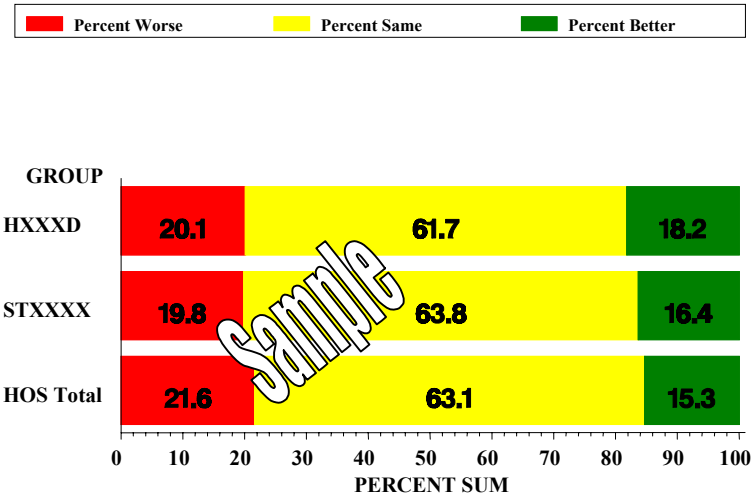


Mental Health

Performance Measurement results for mental health are based on risk adjusted two year changes in MCS scores. A reliable and valid measure of mental health, very high MCS scores indicate frequent positive affect, absence of psychological distress, and no limitations in usual social and role activities due to emotional problems.[7, 8] Low MCS scores indicate frequent psychological distress, and social and role disability due to emotional problems. MCS is highly correlated with the SF, RE, and MH scales. Beneficiaries were classified into three categories: MCS better than expected; MCS same as expected; and MCS worse than expected.

The figure below depicts the national HOS total, state total, and plan level Mental Health Performance Measurement results. At the national level, 15.3% of beneficiaries were better than expected in terms of mental health (green), 63.1% remained the same as expected (yellow), and 21.6% were worse than expected (red) at follow up.

MENTAL HEALTH PERFORMANCE MEASUREMENT RESULTS FOR PLAN HXXXD, STATE STXXXX TOTAL, AND HOS TOTAL

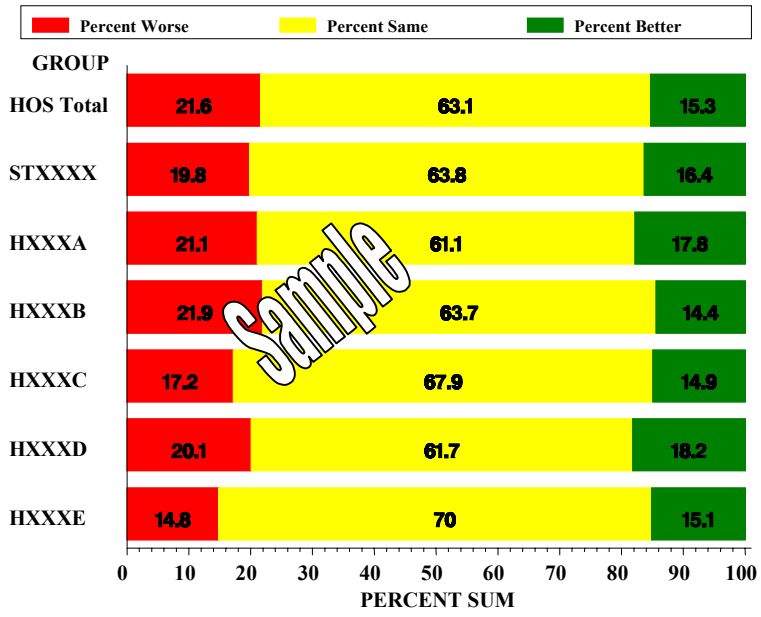


For purposes of comparison, the following figure depicts the plan level Mental Health Performance Measurement results for all plans in **your** state.

[7] Ware JE, Kosinski M, Bayliss MS, McHorney CA, Rogers WH, Raczek A. Comparison of methods for the scoring and statistical analysis of SF-36® health profiles and summary measures: summary of results from the Medical Outcomes Study. *Med Care* 1995; 33(Suppl. 4): AS264-AS279.

[8] Ware, JE and Kosinski, M. *SF-36 Physical and Mental Health Summary Scales: A Manual for Users of Version 1*, Second Edition, Lincoln, RI: QualityMetric, Inc., 2001.

MENTAL HEALTH PERFORMANCE MEASUREMENT RESULTS FOR ALL PLANS IN STXXXX, STXXXX TOTAL, AND HOS TOTAL



What is *Expected*?

Based on the Performance Measurement results, each plan was assigned a "worse than expected," "same as expected," or "better than expected" summary designation. Plans rated "better than expected" had a significantly *higher* proportion of beneficiaries who were "better" or "the same" over the two year period, based upon the comparison of that plan's results with results for all other HOS plans in the United States (US). Plans rated "worse than expected" had a significantly *lower* proportion of beneficiaries who were "better" or "the same" over the two year period, based upon the comparison of that plan's results with results for all other HOS plans in the US. For details on the statistical analysis used to determine these findings, please refer to the Methodology section (D).

The classification of plans presented in this report is based on comparisons of each plan with the national average. When two specific plans are compared, such as two plans within a state, cautious interpretation is advised. There can only be reasonable certainty that Plan A had a better result than Plan B, if Plan A is classified as "better than expected" and Plan B is classified as "worse than expected." If Plan A appears to have a better result than Plan B, but the difference between the plans does **not** meet the above described criterion, then the observed plan difference might be explained by statistical variation.

An assessment of mortality and PCS findings reveals that plans did not differ significantly in either of these measures at the national level. All plans fell into the "same as expected" designation. The following table depicts the physical health summary findings for all plans in **your** state.

PHYSICAL HEALTH SUMMARY FINDINGS FOR STXXXX

Plan ID	Worse than Expected	Same as Expected	Better than Expected
HXXXA		✓	
HXXXB		✓	
HXXXC		✓	
HXXXD		✓	
HXXXE		✓	

An assessment of MCS findings reveals that plans did differ significantly at the national level. Examination of the summary findings for MCS reveals 28 outlier plans at the national level. Fifteen of the outlier plans were designated as "worse than expected" compared to the national average, and 13 plans were designated as "better than expected" compared to the national average. An independent evaluation of the outlier plans is currently being implemented. The following table depicts the mental health summary findings for all plans in **your** state.

MENTAL HEALTH SUMMARY FINDINGS FOR STXXXX

Plan ID	Worse than Expected	Same as Expected	Better than Expected
HXXXA		✓	
HXXXB		✓	
HXXXC			✓
HXXXD		✓	
HXXXE			✓

DISTRIBUTION OF THE SAMPLE

The 1998 *Cohort I Baseline* Medicare HOS included a random sample of 279,135 beneficiaries, including both the aged and disabled, from 269 managed care plans.[9] Of the 279,135 individuals sampled, 62% (172,314) completed the baseline survey. Of the 172,314 respondents, 161,631 were seniors (age 65 or older) who returned a completed survey. A completed survey was defined as one that could be used to calculate PCS and/or MCS scores. During the two years between the 1998 *Cohort I Baseline* survey and the 2000 *Cohort I Follow Up* survey, a number of M+COs discontinued offering managed care to Medicare beneficiaries, or consolidated with other health plans. As a result of these changes, 188 reporting units (M+COs) and 122,444 respondents remained in HOS. For purposes of plan comparisons, this group of 122,444 beneficiaries comprises the *Cohort I Performance Measurement analytic sample*.

At the time of follow up, 82,625 beneficiaries were seniors age 65 or older who had completed a baseline survey and were still alive and enrolled in their original M+CO. These beneficiaries are referred to as the *Cohort I Follow Up eligible sample*. A total of 71,094 eligible beneficiaries returned a survey that could be used to estimate PCS and/or MCS scores. These 71,094 beneficiaries comprise the *Cohort I Follow Up respondent sample*.

The Performance Measurement results are based on the analytic sample of 122,444 and not the entire population sampled at baseline and follow up. At the national level, 8,047 beneficiaries died between baseline and the two year follow up. Another 31,772 beneficiaries voluntarily disenrolled from their M+COs during the same two year period. Of the 82,625 individuals eligible for follow up, 71,094 beneficiaries responded; and 11,531 did not respond to the follow up survey. It is important to remember that a respondent is defined as an eligible beneficiary who returned a survey that could be used to estimate a PCS and/or MCS score.

*The original baseline sample size for **your** plan (HXXXD) was 1,000; however, 351 beneficiaries were not included in the analytic sample because they did not complete the baseline survey or were not seniors. Therefore, your plan's analytic sample size is 649.*

The following table depicts the distribution of the *analytic sample* at the national, state, and plan levels. All plans within **your** state are included for purposes of comparison. In this table, CIR refers to *Cohort I Follow Up*.

[9] National Committee for Quality Assurance. *HEDIS 3.0/1998, Volume 6: Health of Seniors Survey Manual*. Washington DC: NCQA Publication, 1998.

DISTRIBUTION OF THE ANALYTIC SAMPLE FOR THE STATE OF STXXXX

	Analytic Sample	Deaths	Disenrolled	CIR Non-Respondents	CIR Respondents
HOS Total	122,444	8,047	31,772	11,531	71,094
All XX Plans	3,773	195	1,293	254	2,031
HXXXA	1,240	71	610	77	482
HXXXB	634	43	48	53	490
HXXXC	616	29	164	42	381
HXXXD	649	32	51	56	510
HXXXE	634	20	420	26	168

In the above table, disenrolled refers to beneficiaries who *voluntarily* disenrolled from their plans (those that were disenrolled *involuntarily* were excluded from the analytic sample). For further information on the distribution of the sample across time, refer to the Methodology (D) and National Trends (E) sections.

RESPONSE RATES

As discussed in the previous section, a response is defined as a survey with a PCS and/or MCS score. Response rates were calculated at the plan, state, and national levels by dividing the number of respondents by the corresponding eligible sample size. Of the 82,625 seniors eligible for follow up, PCS and/or MCS scores could be generated for 71,094, yielding a response rate of 86.0%.

Focusing on the 188 reporting units (M+COs) at follow up, the average number of respondents per plan was 378, with a range of eight to 1,715 respondents. Fifty percent of the plans (the interquartile range) had between 237 and 462 respondents. Ten percent of the plans had 580 or more respondents, and ten percent had 167 or fewer respondents. Based on the analytic criteria, the mean plan level response rate was 85.0%, with a range of 47.7% to 93.9%. Fifty percent of the plans had a response rate between 82.9% and 89.1%. A total of 16.5% of the plans had a response rate of 90% or higher. The following table presents the eligible sample sizes and response rates for all plans in **your** state.

RESPONSE RATES AT FOLLOW UP FOR THE STATE OF STXXXX

	Sample Size	Respondents	Response Rate (%)
HOS Total	82,625	71,094	86.0
All XX Plans	2,285	2,031	88.9
HXXXA	559	482	86.2
HXXXB	543	490	90.2
HXXXC	423	381	90.1
HXXXD	566	510	90.1
HXXXE	194	168	86.6

Introduction

This section provides an introduction to the Medicare HOS, including discussion of the HOS goals, a review of the HOS survey timeline, and an overview of the HOS reporting process.

INTRODUCTION TO THE MEDICARE HEALTH OUTCOMES SURVEY

The CMS is committed to monitoring the quality of care provided by M+COs. To better evaluate this care, CMS, in collaboration with the National Committee for Quality Assurance (NCQA), launched the first Medicare managed care outcomes measure in the Health Plan Employer Data and Information Set (HEDIS®) in 1998.[1] The measure includes the most recent advances in summarizing physical and mental health outcomes results and appropriate risk adjustment techniques. This measure was initially titled Health of Seniors, and was renamed the Medicare Health Outcomes Survey during the first year of implementation. This name change was intended to reflect the inclusion of Medicare recipients who are disabled and not seniors (age 65 and older) in the sampling methodology.

The HOS measure was developed under the guidance of a Technical Expert Panel (TEP) comprised of individuals with specific expertise in the health care industry and outcomes measurement. The TEP continues to oversee and develop the science of the HOS measure. The CMS has contracted with NCQA to support the standardized administration of the HOS survey, including selecting, training, and certifying independent survey vendors that the plans contract with to administer the survey.

Data collection for *Cohort I Baseline* (Round One) occurred in 1998, and findings were distributed in 1999. Data collection for *Cohort II Baseline* (Round Two) occurred in 1999, and findings were distributed in 2000. Data collection for *Cohort III Baseline* and *Cohort I Follow Up* (Round Three) occurred in 2000, and findings were distributed in 2001.

The CMS will provide beneficiaries with plan-to-plan comparisons based on HOS data. HOS results will also be an important part of CMS' quality improvement activities, as CMS will include the HOS results as one of the factors in their performance assessment program.

[1] HEDIS® is a registered trademark of the National Committee for Quality Assurance.

MEDICARE HEALTH OUTCOMES SURVEY TIMELINE

HOS survey data are collected annually for a new sample of members (cohort), with a two year follow up for each baseline cohort. The HOS 2000 survey administration was the first year of parallel data collection on two separate samples for M+COs (*Cohort III Baseline* and *Cohort I Follow Up*). Timelines for the sampling protocol are described in the table below[2]:

	ROUND I (1998)	ROUND II (1999)	ROUND III (2000)	ROUND IV (2001)	ROUND V (2002)
COHORT I	CI Baseline		CI Follow Up	**CI Results Publicly Reported**	
COHORT II		CII Baseline		CII Follow Up	CII Results Publicly Reported
COHORT III			CIII Baseline		CIII Follow Up
COHORT IV				CIV Baseline	
COHORT V					CV Baseline

[2] National Committee for Quality Assurance. *HEDIS® 2000, Volume 6: Specifications for the Medicare Health Outcomes Survey*. Washington D.C.: NCQA Publication, 2000.

REPORTING MEDICARE HEALTH OUTCOMES SURVEY RESULTS

The Medicare HOS results are used to monitor the health of the general population, to evaluate treatment outcomes and procedures, and to provide external performance measurement.[3] Results from *Cohorts I, II,* and *III Baseline* have been disseminated in cohort specific baseline reports to the M+COs that participated in the respective cohorts. PROs also received cohort specific baseline reports which consisted of a compilation of all M+CO reports in their respective state(s).

This Performance Measurement Report is designed to provide M+COs and PROs with the measures of physical and mental health change for Medicare beneficiaries over the two year period between baseline and follow up. After distribution of this *Cohort I* Performance Measurement Report, M+COs and PROs will receive a merged data set of the baseline and follow up data. The merged data set will be disseminated in an electronic format to both M+COs and PROs.

Public reporting of HOS results through the Medicare website will allow Medicare beneficiaries the opportunity to access information and data that will assist them in health plan comparison and selection.

The Medicare HOS Information and Technical Support Telephone Line (1-888-880-0077), as well as the HOS e-mail address (azpro.hos@sdps.org), are available to provide assistance with report questions and interpretation.

[3] National Committee for Quality Assurance. *HEDIS® 2001, Volume 6, Specifications for the Medicare Health Outcomes Survey*. Washington D.C. NCQA Publication. 2001.

Methodology

This section describes the development of the Medicare HOS, the role of the SF-36® survey instrument in HOS, and the methods used to collect and analyze the HOS data.

DEVELOPMENT OF THE MEDICARE HEALTH OUTCOMES SURVEY

In the mid-1990s, Medicare beneficiaries were joining health maintenance organizations (HMOs) and other types of managed care organizations (MCOs) in increasing numbers. It became apparent to CMS that the agency needed performance reporting requirements for Medicare managed care. The CMS worked with NCQA to incorporate the Medicare population into NCQA's HEDIS® performance measurement set. HEDIS® was rapidly becoming a standard reporting requirement of purchasers in the commercial insurance market.

The integration of the Medicare population into HEDIS® was achieved with the release of HEDIS® 3.0. The CMS, NCQA and others felt there was a need to develop additional measures for the Medicare population including an "outcomes" measure for HEDIS®. Traditionally, HEDIS® contained "process" measures that assessed interventions such as mammograms for older women and retinal eye exams for people with diabetes. While evidence in the scientific literature tied the measured processes or interventions to favorable patient outcomes, there was a desire to develop an outcomes measure that captured performance across multiple aspects of care.

The CMS, NCQA, Health Assessment Lab (HAL), and Performance Measurement experts worked together to develop a measure that would assess the physical functioning and mental well being of Medicare beneficiaries over time. It was decided that this measure should include a set of survey questions known as the SF-36®. The SF-36® was developed as part of the Medical Outcomes Study, a national research effort, and has a long history of use in estimating relative disease burden for numerous conditions.[1] The survey is referenced in the literature in connection with over 150 diseases and conditions including arthritis, back pain, depression, diabetes and hypertension.[2] Additional items were included in HOS in addition to the SF-36® survey to allow for case mix adjustment, which is essential for meaningful and valid plan-to-plan comparisons of health outcomes.

The HOS measure was approved for inclusion in HEDIS® 3.0 by the Committee on Performance Measurement (CPM), the NCQA panel that oversees the development and evolution of HEDIS®. Originally released in 1997 as the Health of Seniors survey, the name of the measure was later changed to the Medicare Health Outcomes Survey to reflect the inclusion of Medicare beneficiaries under the age of 65 with disabilities. The CMS has contracted with Health

[1] Tarlov AR, Ware JE, Greenfield S, Nelson EC, Perrin E, Zubkoff M. *The Medical Outcomes Study: an application of methods for monitoring the results of medical care. Journal of the American Medical Association.* 1989; 262:925-930.
[2] QualityMetric. *Search Bibliography*. www.sf-36.com/cgi-bin/bibsearch.cgi. December 5, 2000.

Assessment Lab, Health Economics Research (HER), Health Services Advisory Group (HSAG), National Committee for Quality Assurance, and QualityMetric (QM) to implement and operationalize all aspects of the HOS measure. For additional information on the HOS project team, please refer to the HOS Partners section (I).

In 1998, CMS required Medicare MCOs with contracts in effect on or before January 1, 1997 to participate in HOS. Some Medicare MCOs were required to report by market areas, geographic areas containing more than 5,000 members that generally are served by distinctly separate networks of service providers (referred to as "contract markets"). In 1999, CMS required all Medicare + Choice Organizations (M+COs) and section 1876 risk and cost health plans with contracts in place on or before January 1, 1998 to participate in HOS. In addition, selected PACE (Program of All-inclusive Care for the Elderly) plans, EverCare plans and demonstration risk plans participated in the second year administration. A Spanish language version of the survey was also incorporated into the survey protocol. In 2000, CMS required all M+COs, continuing cost contractors, PACE plans, Social HMOs, Medicare Choices and Department of Defense (DOD) Subvention Demonstration plans with contracts in place on or before January 1, 1999 to participate in the *Cohort III Baseline* survey. All plans with contracts in place on or before January 1, 1997 that participated in the *Cohort I Baseline* survey in 1998 were required to participate in the *Cohort I Follow Up* survey.

SF-36® HEALTH SURVEY

The SF-36® is a multi-purpose, short-form health survey with only 36 questions. It yields an 8-scale profile of scores as well as physical and mental health summary measures. It is a generic measure, as opposed to one that targets a specific age, disease, or treatment group. As documented in more than 2,500 publications, the SF-36® has proven useful in both general and specific populations, comparing the relative burden of diseases, differentiating the health benefits produced by a wide range of different treatments, and screening individual patients. The most complete information about the history and development of the SF-36, its psychometric evaluation, studies of reliability and validity, and normative data is available in two user's manuals.[3, 4]

The SF-36® asks respondents about their usual activities and how they would rate their health. It is a barometer of physical and mental health functional status. Concepts (scales) included in the SF-36® are:

- Physical Functioning (PF) – These ten questions ask respondents to indicate the extent to which their health limits them in performing physical activities.
- Role-Physical (RP) – These four questions assess whether respondents' physical health limits them in the kind of work or other usual activities they perform, both in terms of time and performance.
- Role-Emotional (RE) – These three questions assess whether emotional problems have caused respondents to accomplish less in their work or other usual activities, both in terms of time and performance.
- Bodily Pain (BP) – These two questions determine the respondents' frequency of pain and the extent to which it interferes with their normal activities.
- Social Functioning (SF) – These two questions ask respondents to indicate limitations in social function due specifically to health.
- Mental Health (MH) – These five questions ask respondents how frequently they experience feelings representing four major mental health dimensions: anxiety, depression, loss of behavioral/emotional control and psychological well being.
- Vitality (VT) – These four questions ask respondents to rate their well being by indicating how frequently they experience energy and fatigue.
- General Health (GH) – These five questions ask respondents to rate their current health status overall, susceptibility to illness, and their expectations for health in the future.

Figure D1 illustrates the taxonomy of items and concepts underlying the construction of the SF-36® scales and summary measures. The taxonomy has three levels: (1) items, (2) eight scales that aggregate 2-10 items each, and (3) two summary measures that aggregate scales. All but one of the 36 items (self-reported health transition) are used to score the eight SF-36® scales. Each item is used in scoring only one scale. The eight scales form two distinct higher-ordered clusters (principal components) that are the basis for scoring the physical (PCS) and mental (MCS)

[3] Ware JE, Snow KK, Kosinski M, Gandek B. *SF-36® Health Survey Manual and Interpretation Guide.* Boston, MA: The Health Institute, 1993.
[4] Ware JE, Kosinski M. *SF-36® Physical and Mental Health Summary Scales: A Manual for Users of Version 1, Second Edition*. Lincoln, RI: QualityMetric, Incorporated, 2001.

summary measures. These components account for 80-85% of the reliable variance in the eight scales in the US general population and in other countries, in both cross-sectional and longitudinal studies.[5, 6] This discovery made it possible to reduce the number of statistical comparisons involved in analyzing the SF-36® (from eight to two) without substantial loss of information.[7, 8]

The reliability of the two summary measures has been estimated using both internal consistency and test-retest methods. With rare exceptions, reliability estimates for physical and mental summary scores usually exceed 0.90.[9] These trends in reliability coefficients for the summary measures have also been replicated for the elderly and across other groups differing in socio-demographic characteristics and diagnoses.[10] While studies of subgroups indicate slight declines in reliability for more disadvantaged respondents, reliability coefficients consistently exceeded recommended standards for group level analysis.

Studies of validity generally support the intended meaning of high and low SF-36® scores as documented in the original user's manuals.[5, 10] Because of the widespread use of the SF-36® across a variety of applications, evidence from many types of validity research is relevant to these interpretations. Studies to date have yielded content, concurrent, criterion, construct, and predictive evidence of validity. The content validity of the SF-36® has been compared to that of other widely used generic health surveys.[5, 10] Systematic comparisons indicate that the SF-36® includes eight of the most frequently measured health concepts. Among the content areas included in widely used surveys, but not included in the SF-36®, are: sleep adequacy, cognitive functioning, sexual functioning, health distress, family functioning, self-esteem, eating, recreation/hobbies, communication, and symptoms/problems that are specific to one condition. The latter are not included in the SF-36® because it is a generic measure.

The SF-36® is scored from 0 to 100 points, with higher scores indicating better functioning on both the individual scales and summary measures (PCS and MCS). The HOS individual scale scores, as well as the PCS and MCS scores, have been normed to the values for the 1998 general US population, so that a score of fifty represents the national average for a given scale or summary score. In addition, the norm based score for the 1998 general US population has a standard deviation (SD) of ten points. It is important to note however, that the 1998 general population **elderly** norms used in this report reflect a PCS mean score of 42.6 and an MCS mean score of 52.0.

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[5] Ware JE, Snow KK, Kosinski M, Gandek, B. *SF-36® Physical and Mental Health Summary Scales: A User's Manual.* Boston, MA: The Health Institute, 1993.

[6] Gandek B, Ware JE, Aaronson NK, Alonso J, Apolone G, Bjorner J, *et al.* Tests of data quality, scaling assumptions and reliability of SF-36® in eleven countries: Results from the IQOLA Project. *J Clin Epidemiol* 1998; 51:1149-1158.

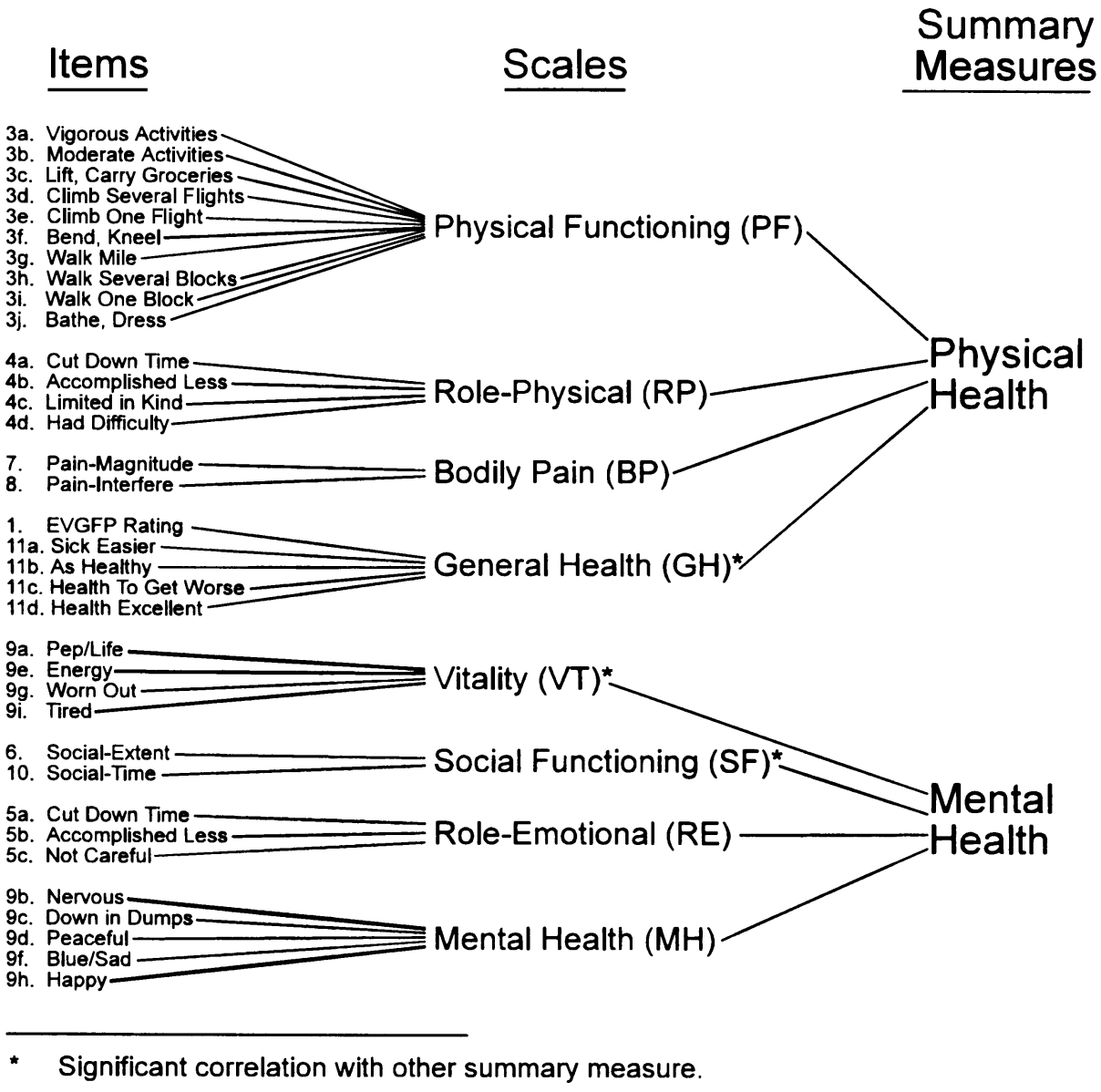
[7] Ware JE, Kosinski M, Bayliss MS, McHorney CA, Rogers WH, Raczek A. Comparison of methods for the scoring and statistical analysis of SF-36® health profiles and summary measures: summary of results from the Medical Outcomes Study. *Med Care* 1995; 33: AS264-AS279.

[8] Ware JE, Kosinski M. *SF-36® Physical and Mental Health Summary Scales: A Manual for Users of Version 1, Second Edition*. Lincoln, RI: QualityMetric, Incorporated, 2001.

[9] http://www.sf-36.com/cgi-bin/bibsearch.cgi

[10] Ware JE, Kosinski M, Keller SK. *SF-36® Physical and Mental Health Summary Scales: A User's Manual.* Boston, MA: The Health Institute, 1994.

FIGURE D1: SF-36® MEASUREMENT MODEL



Source: Ware, J.E., Kosinski, M., and Keller, S.D. SF-36® Physical and Mental Health Summary Scales: A User's Manual. Boston, MA: The Health Institute, 1994.

METHODOLOGY AND DESIGN

Sampling Methodology

The HOS measure was administered to a randomly selected sample of individuals at baseline from each M+CO. The CMS selected the random samples for each baseline cohort. The sampling methodology is dependent upon the plan's population. For M+COs with Medicare populations of more than 1000 members, a simple random sample of 1,000 members was selected for the baseline survey. For M+COs with populations of 1,000 members or less, all eligible members were included in the sample for the baseline survey.

For the *Cohort I Follow Up* sample, CMS identified beneficiaries from the *Cohort I Baseline* sample who were eligible for remeasurement. Members were eligible for remeasurement if a PCS and/or MCS score was able to be calculated. Beneficiaries were excluded from *Cohort I Follow Up* if they disenrolled from their M+CO subsequent to the *Cohort I Baseline* survey, or were deceased subsequent to the *Cohort I Baseline* survey. Although deceased beneficiaries are excluded from the *Cohort I Follow Up* sample, CMS includes deceased beneficiaries when calculating the HOS Performance Measurement results.[11]

Data Collection

M+COs must contract with an NCQA certified HOS vendor to administer the survey. Vendors follow the protocol contained in *HEDIS®, Volume 6: Specifications for the Medicare Health Outcomes Survey*.[12] The standard HEDIS® protocol for administering the HOS employs a combination of mail and telephone survey administration. The mail component of the survey uses a standardized questionnaire, survey letters, and prenotification and reminder/thank you postcards. Vendors review each returned mail questionnaire for legibility and completeness. If a beneficiary's responses are ambiguous, then a coding specialist employs standardized decision rules. Questionnaires can be entered into a computer manually or optically scanned into a computer readable file. For manually entered data, two separate data entry specialists must key enter responses from each questionnaire.

In those instances when beneficiaries fail to respond after the second mail survey, vendors attempt telephone follow up (with a maximum of six attempts). Vendors perform telephone follow up for members who return an incomplete mail survey in order to obtain responses to missing questions. Vendors use a standardized version of a Computer Assisted Telephone Interviewing (CATI) script to collect telephone interview data for the survey. To ensure the standardization of the data collection process, vendors are prohibited from augmenting or adjusting the HOS protocol or instrument.

[11] National Committee for Quality Assurance. *HEDIS® 2001, Volume 6: Specifications for the Medicare Health Outcomes Survey*. Washington DC: NCQA Publication, 2001.
[12] National Committee for Quality Assurance. *HEDIS® 2000, Volume 6: Specifications for the Medicare Health Outcomes Survey*. Washington DC: NCQA Publication, 2000.

Periodically during the survey administration, and again when data collection is completed, vendors run an edit program against each record in the data file to identify invalid data elements. At the conclusion of the data collection period, vendors perform preliminary data cleaning and editing and follow up with survey respondents, as necessary. For a more detailed discussion on data sampling, collection and submission, please refer to Volume 6 of HEDIS® 2000 (H).

Data Cleaning

Data consistency checks are performed by reviewing the entire HOS data set for out of range values. To verify the presence of unique beneficiaries in the HOS data file, the file is examined for duplicate Health Insurance Claim (HIC) numbers. All dates contained within the data file are verified to correspond to the appropriate range. Frequency distributions of all categorical variables as well as cross tabulations by vendor are performed to identify both out of range values and data shifts in value assignment. The cross tabulations are performed using the entire HOS data file and also specified subsets of the data file. In addition to the cross tabulations of categorical variables, the survey variables such as survey disposition, round number, and survey language are assessed for accuracy and consistency.

After the HOS data file is cleaned and edited, additional variables are added to the file. Plan specific variables include number of ineligible beneficiaries, sample size, total number of completed surveys, number completed by mail, number completed by telephone, overall response rate, mail response rate, and telephone response rate. All date variables contained in the data file are converted to SAS date format (elapsed date variables) to facilitate the calculation of duration of enrollment and age, which are then incorporated into the data file. Upon completion of the HOS data editing and cleaning process, the final data set is produced.

Scoring SF-36® Physical and Mental Health Summary Measures

Physical and mental health are estimated, respectively, using the PCS and MCS scoring algorithms recommended by the developers of the SF-36® Health Survey, as documented in detail elsewhere.[13] Briefly, these norm-based algorithms yield favorably scored (i.e., higher is better) scales that have a mean of 50 and a standard deviation of 10 in the general US population. For PCS, very high scores indicate no physical limitations, disabilities or decrements in well being, high energy level and a rating of health as "excellent." For MCS, very high scores indicate frequent positive affect, absence of psychological distress and no limitations in usual social and role activities due to emotional problems.

So that population norms would be current, in relation to the timing of the first HOS cohort survey, the means and standard deviations used in scoring PCS and MCS came from the 1998 National Survey of Functional Health Status. So that PCS and MCS scores would have the same interpretation in the HOS as in previous studies, the weights (i.e., component scoring coefficients) used in aggregating the eight scales to score each of those summaries are the

[13] Ware JE, Kosinski M. *SF-36® Physical and Mental Health Summary Scales: A Manual for Users of Version 1, Second Edition*. Lincoln, RI: QualityMetric, 2001.

original standardized weights recommended by the developers.[14] These weights, which have been used in more than 100 published studies reporting results for the PCS and MCS summary measures, have consistently yielded reliable and valid scores in both general and elderly populations. Given this consistency and reliability, the published interpretation guidelines are applicable to the HOS.

The HOS is among the first large scale surveys to take advantage of improved algorithms for scoring the PCS and MCS summary measures for respondents with missing data. The improved algorithms were adopted because about 20% of HOS *Cohort I* respondents had one or more missing SF-36® responses. Most previous studies have used the "half scale" rule for imputing scale scores for those with missing data. This solution, which was developed during the Health Insurance Experiment more than 20 years ago, is widely used in health status research.[15] However, the "half scale" approach has several disadvantages, including: being applicable only to those with at least half of the items answered for each of the eight scales; introducing a bias in score estimates because answered items are simply averaged in estimating missing items; and failing to provide an estimation strategy for PCS and MCS for those with a missing scale score.

The improved scoring algorithms use the missing data estimation (MDE) utility. The MDE scoring utility, which was validated using item response theory, calculates an unbiased score as long as at least one item is answered within each scale. Further, the MDE software uses regression methods to score PCS and MCS for those with one scale missing. As documented elsewhere**,** the MDE scoring algorithms have been evaluated in the 1998 general US population and in the HOS.[16] In the HOS *Cohort I Performance Measurement analytic sample*, PCS and MCS scores for more than 5,000 (4.5%) study participants were calculated using the MDE software. These scores would have previously been lost at baseline due to missing data.

Data Analysis

For purposes of plan comparisons, analysis begins with the *Cohort I Baseline* sample of seniors (161,631) that had sufficient SF-36® data to derive PCS and/or MCS scores at baseline. Of the 161,631 beneficiaries, 122,444 were seniors whose plans continued to have a contract in place at the time of follow up in 2000. The 122,444 seniors in this group comprise the *Cohort I Performance Measurement analytic sample*. Of the 122,444 seniors, 39,819 beneficiaries originally were in plans that remained in Medicare managed care; however, the beneficiaries themselves were no longer enrolled in the health plans at the time of follow up in 2000. Of these 39,819 beneficiaries, 8,047 were excluded by reason of death and 31,772 by reason of voluntary disenrollment. Thus, 82,625 seniors in this analysis that completed the baseline survey in *Cohort I* were resurveyed. This group comprises the *Cohort I Follow Up eligible sample.* Of those

[14] Ware JE, Kosinski M. *SF-36® Physical and Mental Health Summary Scales: A User's Manual*. Lincoln, RI: QualityMetric, 2001.
[15] Ware JE, Brook RH, Davies-Avery A, Williams K, Stewart AL, Rogers WH, *et al. Model of Health and Methodology*. Santa Monica, CA: RAND Corporation, 1980; R-1987/1-HEW. (*Conceptualization and Measurement of Health for Adults in the Health Insurance Study; vol. 1*).
[16] Kosinski MK, Bayliss, M, Bjorner JB, Ware JE. *Improving Estimates of SF-36® Health Survey Scores for Respondents in Missing Data*. Medical Outcomes Trust Monitor, Fall 2000; 5 (1): 8-10.

resurveyed, 71,094 had sufficient SF-36® data to derive follow up PCS and/or MCS scores at follow up. This group of seniors is referred to as the *Cohort I Follow Up respondent sample*.

The goal of the *Cohort I* Performance Measurement analysis was to compare physical and mental health outcomes in M+COs, in terms of the percentages of beneficiaries who were better, same, or worse than expected at the two year follow up. The primary outcomes are death, change in physical health as measured by PCS, and change in mental health as measured by MCS. Death and PCS outcomes were combined into one overall measure of change in physical health. Multivariate statistical methods were used for case mix adjustment, so all plans would be as equal as possible in terms of demographic and socioeconomic characteristics, chronic conditions, initial health status, and other design variables. All beneficiaries age 65 and older who completed the HOS at baseline and had a baseline PCS and/or MCS score were included in the analysis of death outcomes. Beneficiaries age 65 and older who completed the HOS at baseline and follow up and for whom PCS and/or MCS could be computed at both time points were included in the analysis of PCS and MCS outcomes.

The data analysis can be classified into four stages: (1) classification of actual outcomes for each beneficiary; (2) calculation of expected outcomes for each beneficiary; (3) calculation of plan level results; and (4) tests of significance of plan level differences.

Beneficiaries were classified as to whether their PCS and MCS scores were better, the same or worse than expected over the two year period. Calculation of a simple change score (e.g., follow up PCS minus baseline PCS) masks the proportion of beneficiaries with follow up scores that differed from those at baseline. Therefore, beneficiaries were grouped into three change categories: (1) those whose follow up score did not differ by more than would be expected by chance ("same" group); (2) those who improved more than would be expected by chance ("better" group); and (3) those whose follow up score declined more than would be expected ("worse" group). PCS is considered to be the same if it changed by less than 5.66 points (plus or minus) between baseline and follow up survey administrations. A change greater than 5.66 points (plus or minus) is outside of the 95% confidence interval for an individual beneficiary, as estimated from the standard deviation and reliability of the PCS. MCS is considered to be the same if it changed by less than 6.72 points (plus or minus). Unlikely to be due to measurement error, changes large enough to be labeled as better or worse for PCS and MCS also have been shown to be relevant in terms of a wide range of clinical and social criteria.[17] A similar method of classifying the health outcomes of beneficiaries was used in the Medical Outcomes Study.[18]

Death within two years of the baseline survey was classified as a "worse than expected" physical outcome. Beneficiaries who died were identified using CMS data. Three categories of change in physical health were defined by combining death and PCS outcomes: alive and PCS better; alive and PCS same; and dead or PCS worse. Classification of death as a "worse" outcome had the advantage of combining mortality and health status into one physical health measure, without making any assumptions about the scalar value for death. Combining death with PCS also has

[17] http://www.sf-36.com/cgi-bin/bibsearch.cgi

[18] Ware JE, Bayliss MS, Rogers WH, Kosinski M, Tarlov AR. Differences in 4-year health outcomes for elderly and poor, chronically ill patients treated in HMO and fee-for-services systems: Results from the Medical Outcomes Study. *JAMA* 1996; 276: 1039-1047.

face validity; beneficiaries with baseline PCS scores below 25 were eight times more likely to die in the two year follow up period than beneficiaries with PCS scores above 54. Death is not included in the calculation of mental health (MCS) outcomes because there is a much stronger relationship between death and physical health, and because death should not be counted twice. Beneficiaries who completed the follow up HOS survey and subsequently died were counted as alive for purposes of the analysis.

In summary, there were six main categories of actual outcomes: (1) alive and PCS better; (2) alive and PCS same; (3) dead or PCS worse; (4) MCS better; (5) MCS same; and (6) MCS worse. Each beneficiary is classified into only one of the three Physical Health categories and one of the three Mental Health categories.

Logistic regression techniques were used to adjust for case mix and calculate expected outcomes for each beneficiary. This adjustment process is necessary, as health plans differ with respect to how at risk their beneficiaries are. Expected outcomes included: death; PCS same or better; PCS better; MCS same or better; and MCS better. The primary outcomes for the analysis are "alive and PCS same or better" and "MCS same or better." That is, the primary outcomes were specified a priori as measures that indicate whether a health plan was maintaining or improving the health of its members. However, expected outcomes for "PCS better" and "MCS better" were needed to calculate the percentages of beneficiaries who were better, the same, or worse than expected. The percentage of beneficiaries who were worse at follow up is calculated as one minus the percentage who were better or the same.

In calculating expected outcomes, separate case mix models were warranted for death (which required extensive case mix control), and for PCS and MCS (which did not require much case mix control). The development and testing of these models was the subject of extensive analysis, which will be described in more detail in other HOS publications. A series of eight different death models, three different PCS models, and three different MCS models were used, because all beneficiaries did not have data for all of the independent variables that could be used to calculate an expected score. The most comprehensive model possible was used for each beneficiary. If a beneficiary had all needed independent variables for the most comprehensive model (Model A), then their expected score was calculated using that model. If not, then the next most comprehensive model (Model B) was used if all needed independent variables were available, and so on. One model was used for each beneficiary, and there are no predictions made with missing data. Detail about the variables included in each model is provided in Table D1.

In brief, models used to predict the probability of death for each beneficiary included variables to control for differences in demographic and socioeconomic characteristics, chronic conditions, functional status, and survey administration. Demographic and socioeconomic variables included age, gender, race, education, marital status, income, home ownership, and Medicaid status. Chronic conditions were measured with a checklist of 13 conditions and four indicators of current cancer treatment. Conditions also were grouped into four categories that were strong, moderate, weak and negative predictors of death, for models in which the individual chronic condition data was not available. Functional status was measured using a combined SF-36® Physical Functioning/Activities of Daily Living scale, the SF-36® General Health and Social

Functioning scales, and one item that asked beneficiaries to compare their health to that of their peers. The PF/ADL scale was a Likert scale that allowed lower levels of physical functioning to be measured than with the SF-36® Physical Functioning scale alone. The PF/ADL, General Health and Social Functioning scales had the strongest relationship to mortality of the SF-36® scales. Baseline PCS and MCS scores also were used when scale-level data was not available.

Models used to predict expected change in PCS and MCS scores (e.g., PCS better) used a set of exogenous demographic and socioeconomic variables (age, gender, race, education, marital status, income, home ownership, and Medicaid status). Because each beneficiary served as his or her own control for the PCS and MCS analysis, substantial case mix was already reflected in the baseline PCS or MCS scores. Sensitivity analyses determined that further adjustment for chronic conditions at baseline was not warranted, because errors in disease reports were correlated with functioning. PCS and MCS results also adjusted for the impact of telephone administration. Studies have shown that health status scores tend to be more favorable with interviewer administered surveys; this phenomenon is thought to be the result of people feeling more apprehensive about admitting poorer health directly to another person. To adjust for this, 1.9 points were subtracted from the PCS score and 4.5 points were subtracted from the MCS score, if a survey was administered by telephone. These values were derived using data from a cohort of Veterans Administration beneficiaries who completed the HOS and a VA survey at the same time, using different modes of administration.

The calculation of the overall plan level results was done in several steps. This is illustrated with the calculation for "alive and PCS better," but the same logic applies to other outcomes. First, as discussed above, a variable was created to indicate if each beneficiary in a plan who completed the baseline survey actually died during the two year follow up period. Second, for those beneficiaries who completed both the baseline and follow up surveys, a variable was created to indicate if the PCS score was better or not at the two year follow up period. Third, an expected death rate was calculated for each beneficiary within a plan using logistic regression techniques (detailed above). Fourth, an expected PCS better rate was calculated for each beneficiary using logistic regression techniques (detailed above). Neither the expected death rate nor the expected PCS better calculations include a variable for plan.

To summarize data for all beneficiaries within a plan, the mean expected death rate (E_d) was calculated for all beneficiaries in the plan, along with the mean expected "PCS better" rate (E_{pb}). The expected "alive and PCS better" for the plan is $(1-E_d)*E_{pb}$. For the same beneficiaries within the plan, the mean actual death rate (A_d) and mean actual "PCS better" rate (A_{pb}) were calculated across all beneficiaries. The actual "alive and PCS better" rate for the plan is $[(1-A_d)*A_{pb}]$. The difference between actual and expected results indicates the percentage points by which the plan's actual "alive and PCS better" rate was higher (for a positive difference) or lower (for a negative difference) than expected results. A *t* statistic, expressing the significance of the plan differences from the average national results, was calculated by dividing the plan deviation by the standard error. A *t* statistic that is plus or minus 2 or larger was considered significant, as long as an overall *F test* indicated that the plans differed on the outcome of interest (discussed below). An adjusted plan percent "alive and PCS better" also was calculated by combining the overall (national) results and the plan deviation score, using a logit transformation.

For physical health (mortality and PCS) over the two year follow up period, 33.9% of beneficiaries at the national level were worse (dead or PCS worse), 52.1% were the same (alive and PCS same), and 14.0% were better than expected (alive and PCS better). However, an overall *F test* showed that mortality and PCS did not differ significantly at the plan level (p = 0.107 for death, p = 0.270 for PCS same or better and p = 0.093 for PCS better) across all plans. Therefore, in terms of physical health, all of the plans in HOS did not differ significantly in terms of their overall performance, after adjustment for case mix. Accordingly, no *t* statistics for plans were considered significant.

Over the two year follow up period for MCS, 21.6% of beneficiaries at the national level were worse, 63.1% were the same, and 15.3% were better. Unlike PCS, an overall *F test* reveals that MCS does differ significantly at the plan level ($p < 0.001$ for MCS same or better and $p < 0.001$ for MCS better). Given this significant variation, an outlier plan level analysis for MCS is warranted. The MCS outlier analysis was performed using a *t test* at the plan level for "MCS same or better," which was specified a priori as the main mental health outcome measure. That is, the main mental health outcome indicated whether a health plan was maintaining or improving the mental health of its members. Plans with a *t* statistic ≥ 2 are designated as significantly better than expected, while plans with a *t* statistic ≤ -2 are designated as significantly worse than expected, compared to the average national results. In the overall *Cohort I* Performance Measurement, there were 13 plans identified as better than the national average and 15 plans identified as worse than the national average for MCS.

Additional technical documentation, including a detailed description of the case mix methodology and regression models used, is currently under development and will be available in the near future.

TABLE D1: COVARIATES USED IN ESTIMATION OF EXPECTED MORTALITY AND CHANGE IN PCS/MCS SCORES

Death Model Covariates

Demographic and Socioeconomic Variables

Age (linear), Age 75+, Age 85+ (Models A-H)

Gender (Models A-H)

Age and Gender interaction (Models A-H)

Race/Ethnicity (Black/African-American, Hispanic, Asian/Pacific Islander) – HOS (A-D), CMS (E-H)

On Medicaid or not on Medicaid (Models A-H)

Home owner or non-home owner (Models A-D)

High school graduate or not high school graduate (Models A-D)

Married or not married (single, divorced, widowed, separated) (Models A-D)

Income less than $20,000 or reported income of $20,000 or greater (Models A, C)

Chronic Conditions

Presence or absence of each of 13 chronic conditions: hypertension, myocardial infarction, angina/coronary disease, congestive heart failure, other heart conditions, stroke, pulmonary disease, gastrointestinal disorders, arthritis of hip or knee, arthritis of hand or wrist, sciatica, diabetes, cancer other than skin cancer (Models A, B)

Treatment or non-treatment for 4 cancer types: colon/rectal, lung, breast, prostate (Models A,B)

Mean number of conditions in 4 groups with varying relations to death (Models C-F):

- Strong relationship (congestive heart failure, any cancer, colon/rectal cancer, lung cancer)
- Moderate relationship (pulmonary, diabetes, stroke, myocardial infarction)
- Weak relationship (breast cancer, hypertension, angina/coronary artery disease, other heart)
- Negative relationship (gastrointestinal, arthritis (both types), sciatica, prostate cancer)

Baseline Functional Status

SF-36® Physical Functioning/Activities of Daily Living Index (Models A-E)

SF-36® General Health scale (Models A-E)

SF-36® Social Functioning scale (Models A-E)

One-item measure of General Health compared to others (Models A-E)

Baseline PCS and MCS (Models F-G)

Survey Administration

Telephone or mail survey (Models A-G)

PCS/MCS Model Covariates

Age (linear), Age 75+, Age 85+ (PCS/MCS Models A-C)

Gender (PCS/MCS Models A-C)

Age and Gender interaction (PCS/MCS Models A-C)

Race/Ethnicity (Black/African-American, Hispanic, Asian/Pacific Islander) – HOS (PCS/MCS A-B), CMS (MCS C)

On Medicaid or not on Medicaid (PCS/MCS Models A-C)

Home owner or non-home owner (PCS/MCS Models A-B)

High school graduate or not high school graduate (PCS/MCS Models A-B)

Married or not married (single, divorced, widowed, separated) (PCS/MCS Models A-B)

Income less than $20,000 or reported income of $20,000 or greater (PCS/MCS Model A)

National Trends

This section describes the national trends in the Medicare HOS for the *Cohort I Performance Measurement* sample, including demographics, chronic medical conditions, Activities of Daily Living (ADLs), and a depression screen.

The 1998 *Cohort I Baseline* Medicare HOS included a random sample of 279,135 beneficiaries from 269 M+COs, including both the aged and disabled.[1, 2] Of the 279,135 individuals sampled, 62% (172,314) completed the baseline survey. Of the 172,314 respondents, 161,631 were seniors (age 65 or older) who returned a survey that could be used to estimate PCS and/or MCS scores. During the two years between the 1998 *Cohort I Baseline* survey and the 2000 *Cohort I Follow Up* survey, a number of M+COs discontinued offering managed care to Medicare beneficiaries, or consolidated with other health plans. As a result of these changes, 188 reporting units (M+COs) and 122,444 beneficiaries (seniors with baseline PCS and/or MCS scores) remained in HOS. For purposes of plan comparisons, this group of 122,444 beneficiaries comprises the *Cohort I Performance Measurement analytic sample*.

At the time of follow up, 89,332 people who had completed a baseline survey were still alive and enrolled in their original M+CO. Of the 89,332 individuals in this group, 82,625 were seniors age 65 or older (referred to as the *Cohort I Follow Up eligible sample*). A total of 71,094 eligible beneficiaries returned a survey that could be used to estimate PCS and/or MCS change scores. The 71,094 seniors in this group comprise the *Cohort I Follow Up respondent sample*.

DEMOGRAPHICS (TABLE E1)

The average age of the Medicare HOS *Cohort I Baseline* sample (279,135) was 73.2; while the average age of the analytic sample of seniors (122,444) was slightly higher at 74.3. Similarly, the average age of the respondent sample (71,094) was 73.9 at baseline. Of the 122,444 cases in the analytic sample, 57.7% were female and 42.3% were male. The distribution did not change significantly in the respondent sample, as 58.2% were female and 41.8% were male.

The HOS *Cohort I Performance Measurement analytic sample* was predominately white (88.4%) based on CMS' designation of member race. Beneficiaries who were black comprised 6.8% of the sample, with all other races accounting for an additional 4.5% (0.3% were of unknown race). When focusing on the respondent sample, there is a slight (but not significant) increase in the percentage of beneficiaries who were white (89.3%); no change in other (4.5%) and unknown (0.3%) beneficiaries; and a decrease in the percentage of beneficiaries who were black (5.8%).

The majority of the beneficiaries, 57.7%, in the analytic sample were married, 29.6% were widowed, with 8.8% divorced/separated and 2.5% who were never married. In the respondent

[1] The *Cohort I Performance Measurement* sample's demographic data is based on information taken from the *Cohort I Baseline* survey member level record.

[2] National Committee for Quality Assurance. *HEDIS® 2000, Volume 6, Specifications for the Medicare Health Outcomes Survey*. Washington D.C. NCQA Publication. February 2000.

sample, there is a slight increase in the percentage married (59.2%) and never married (2.6%), and a decrease in the percentage of beneficiaries widowed (28.6%), as well as divorced/separated (8.4%).

The educational status of the beneficiaries in the analytic sample included 30.7% who did not graduate from high school, and 33.8% who graduated from high school but did not attend college. Out of the 33.1% percent of the beneficiaries who attended college, 13.3% obtained a four year college degree. These findings are similar to those observed in the respondent sample: 28.8% did not graduate high school, 35.0% graduated from high school, 34.3% attended college, and 14.1% obtained a four year college degree.

The annual household income of beneficiaries varied from less than $10,000 to over $100,000 per year. Fourteen percent of beneficiaries in the analytic sample reported living near or below the poverty level, earning less than $10,000 annually.[3] The majority of beneficiaries, 41.0%, reported an annual household income of $10,000 - $29,999, with an additional 23.6% earning $30,000 or more per year, and 21.6% who did not know their annual income or did not respond. The respondent sample did not differ significantly from the analytic sample: 12.6% earned less than $10,000, 41.7% earned $10,000 - $29,999, 25.4% earned $30,000 or more, and 20.2% did not respond/did not know.

A detailed graphical presentation of the plan and state specific demographics is included on the accompanying CD-ROM (Figures 8-13).

[3] Based on the United States Department of Health & Human Services 1998 Poverty Guidelines: http://aspe.os.dhhs.gov/poverty/98poverty.htm

TABLE E1

DEMOGRAPHICS

DEMOGRAPHIC ✦	*COHORT I PERFORMANCE MEASUREMENT* ANALYTIC SAMPLE ❂ (N = 122,444)	*COHORT I FOLLOW UP* ELIGIBLE SAMPLE * (N = 82,625)	*COHORT I FOLLOW UP* RESPONDENT SAMPLE • (N = 71,094)
AGE (mean in years)	74.3	74.0	73.9
(standard deviation)	+/- 6.5	+/- 6.3	+/- 6.2
GENDER (%)			
Male	42.3	41.8	41.8
Female	57.7	58.2	58.2
Race (%)			
White	88.4	88.5	89.3
Black	6.8	6.5	5.8
Other	4.5	4.7	4.5
Unknown	0.3	0.3	0.3
Marital Status (%)			
Married	57.7	58.2	59.2
Widowed	29.6	29.3	28.6
Divorced/Separated	8.8	8.7	8.4
Never Married	2.5	2.7	2.6
No Response	1.5	1.3	1.2
Education (%)			
Did Not Graduate HS	30.7	29.7	28.8
High School Graduate	33.8	34.5	35.0
Some College	19.8	19.9	20.2
4 Year Degree & Beyond	13.3	13.6	14.1
No Response	2.5	2.2	2.0
Annual Household Income (%)			
Less than $10,000	14.0	13.3	12.6
$10,000 - $19,999	24.1	23.9	24.1
$20,000 - $29,999	16.9	17.1	17.6
$30,000 - $49,999	15.8	16.3	16.9
$50,000 or more	7.8	8.2	8.5
Don't Know/No Response	21.6	21.3	20.2

✦ *Cohort I* Performance Measurement demographic data are based on information taken from the *Cohort I Baseline* survey member level record.

❂ Limited to seniors (65 years of age or older as of June 1, 1998) with a baseline PCS and/or MCS score and a follow up reporting unit.

* Limited to seniors who were eligible for follow up (alive, baseline PCS and/or MCS score, and still enrolled in the same M+CO).

• Limited to eligible seniors with PCS and/or MCS scores at follow up.

Note: Percentage totals not equal to 100% are due to rounding.

CHRONIC MEDICAL CONDITIONS (TABLE E2)

Thirteen chronic medical conditions are included in the questionnaire. These conditions are: hypertension; angina pectoris or coronary artery disease; congestive heart failure; myocardial infarction or heart attack; other heart conditions, such as heart valve defects or arrhythmias; stroke; emphysema, asthma, or chronic obstructive pulmonary disease; inflammatory bowel disease, including Crohn's disease and ulcerative colitis; arthritis of the hip or knee; arthritis of the hand or wrist; sciatica; diabetes, hyperglycemia, or glycosuria; and any cancer (other than skin cancer).

The number of chronic medical conditions was aggregated for each beneficiary. At baseline, 63.1% (44,096) of the beneficiaries in the respondent sample had two or more chronic conditions, as compared to 67.8% (48,197) at follow up. A detailed graphical presentation of the chronic conditions at the plan, state, and national level is included on the accompanying CD-ROM (Figure 5).

TABLE E2

CHRONIC MEDICAL CONDITIONS

NUMBER OF CHRONIC MEDICAL CONDITIONS REPORTED	*COHORT I PERFORMANCE MEASUREMENT* ANALYTIC SAMPLE (N=122,444)	*COHORT I FOLLOW UP* ELIGIBLE SAMPLE (N=82,625)	*COHORT I FOLLOW UP* RESPONDENT SAMPLE (N=71,094)	
	Baseline (%)	Baseline (%)	Baseline (%)	Follow Up (%)
0 or 1	34.6	35.9	36.0	31.7
2 or 3	37.8	38.3	38.4	38.8
4 or more	26.6	25.0	24.7	29.0
No Response	1.0	0.8	0.9	0.5

ACTIVITIES OF DAILY LIVING (TABLE E3)

Six ADLs were included in the HOS survey to determine self reported difficulty with performance of daily tasks. Activities included bathing, dressing, eating, getting in or out of chairs, walking, and using the toilet. Responses reporting difficulty or inability to do the activity were categorized as "having difficulty."

Overall, beneficiaries had the most difficulty with activities requiring lower body strength, such as, walking and getting in or out of chairs. They had moderate difficulty with bathing and dressing, and the least difficulty with eating and toileting. In the respondent sample, there was an increase in the number of beneficiaries who reported difficulty with performing ADLs in all six categories from baseline to follow up.

A detailed graphical presentation of the ADLs at the plan, state, and national level is included on the accompanying CD-ROM (Figure 6).

TABLE E3
ACTIVITIES OF DAILY LIVING (ADLS)

DIFFICULTY WITH ACTIVITIES OF DAILY LIVING	*COHORT I PERFORMANCE MEASUREMENT* ANALYTIC SAMPLE (N=122,444)	*COHORT I FOLLOW UP* ELIGIBLE SAMPLE (N=82,625)	*COHORT I FOLLOW UP* RESPONDENT SAMPLE (N=71,094)	
	Baseline (%)	**Baseline (%)**	**Baseline (%)**	**Follow Up (%)**
Bathing				
Yes	13.0	10.8	10.0	13.9
No	85.6	88.0	89.0	85.1
Missing	1.4	1.2	1.0	1.0
Dressing				
Yes	10.6	8.6	7.9	11.4
No	88.0	90.2	91.0	87.7
Missing	1.4	1.2	1.1	0.9
Eating				
Yes	5.3	4.3	3.9	5.5
No	93.1	94.4	94.8	93.2
Missing	1.6	1.3	1.3	1.3
Getting In or Out of Chairs				
Yes	24.9	23.1	22.5	27.5
No	73.5	75.6	76.2	71.2
Missing	1.6	1.3	1.3	1.3
Walking				
Yes	32.5	30.2	29.4	35.3
No	65.9	68.5	69.3	63.6
Missing	1.6	1.3	1.3	1.1
Using the Toilet				
Yes	7.6	6.3	5.8	8.2
No	91.0	92.5	93.0	90.8
Missing	1.4	1.2	1.2	1.0

DEPRESSION SCREEN (TABLE E4)

A participant of the Medicare HOS Survey is considered to have a positive depression screen when he or she answers "yes" to *any* of the three depression questions (numbers 38, 39 or 40). Individuals with a positive depression screen may be at risk for depressive disorders.[4] These individuals may experience poor outcomes.

At baseline, 24.2% (17,200) of the respondent sample answered "yes" to any of the three depression questions; while 25.3% (17,958) answered "yes" at follow up. A detailed graphical presentation of the Depression Screen at the plan, state, and national level is included on the accompanying CD-ROM (Figure 4).

TABLE E4

DEPRESSION SCREEN

POSITIVE DEPRESSION SCREEN	*COHORT I* *PERFORMANCE MEASUREMENT* ANALYTIC SAMPLE (N = 122,444)	*COHORT I* *FOLLOW UP* ELIGIBLE SAMPLE (N = 82,625)	*COHORT I* *FOLLOW UP* RESPONDENT SAMPLE (N = 71,094)	
	Baseline (%)	Baseline (%)	Baseline (%)	Follow Up (%)
Yes	26.8	25.0	24.2	25.3
No	71.8	73.8	74.7	73.7
Missing	1.4	1.2	1.1	1.0

[4] Burnam MA, Wells KB, Leake B, Landsverk J. Development of a brief screening instrument for detecting depressive disorders. Med Care 1988; 26:775-789.

Participating Plans

Please Note: In March 2001 new reporting units were generated by CMS to identify all M+COs in *Cohort I*. In order to accurately reflect the organization and product names associated with the reporting units at that time, the CMS April 2001 Monthly Report of Managed Care Health Plans was used to create the following table. Organization names, product names, and other information may have changed since April 2001.

The following table is sorted by state. A key to the table is included on page F8.

Reporting Unit	Organization Name	Product Name	State	Plan Type	Model Type	Tax Status
H0150	THE OATH OF ALABAMA, INC.	SENIORS FIRST	AL	CMP	IPA	PRO
H0151	UNITED HEALTHCARE OF ALABAMA, INC.	MEDICARE COMPLETE	AL	CMP	IPA	PRO
H0451	HMO PARTNERS/ HEALTH ADVANTAGE	HEALTH ADVANTAGE MEDIPAK HMO	AR	HMO	IPA	PRO
H0303	PACIFICARE OF ARIZONA, INC.	SECURE HORIZONS	AZ	HMO	IPA	PRO
H0307	HUMANA HEALTH PLAN, INC.	HUMANA GOLD PLUS PLAN	AZ	HMO	IPA	PRO
H0350	MARICOPA INTEGRATED HEALTH SYSTEM HP	MARICOPA SENIOR SELECT (MSSP)	AZ	CMP	IPA	NON
H0351	HEALTH NET OF ARIZONA, INC.	SENIOR CARE	AZ	HMO	IPA	PRO
H0352	UNITED HEALTHCARE OF ARIZONA	MEDICARE COMPLETE	AZ	CMP	IPA	PRO
H0354	CIGNA HEALTHCARE OF ARIZONA, INC.	CIGNA HEALTHCARE FOR SENIORS	AZ	HMO	STAFF	PRO
H0502N	CONTRA COSTA HEALTH PLAN	SENIOR HEALTH	CA	HMO	STAFF	NON
H0504S	CA PHYSICIANS SERV/DBA BLUE SHIELD OF CALIF	SHIELD 65	CA	CMP	IPA	NON
H0523S	AETNA U.S.HEALTHCARE OF CALIFORNIA, INC.	AETNA U.S. HEALTHCARE GOLDEN MEDICARE PLAN	CA	HMO	IPA	PRO
H0524S	KAISER FOUNDATION HP, INC.	KAISER PERMANENTE SENIOR ADVANTAGE	CA	HMO	GROUP	NON
H0526S	KAISER FOUNDATION HP, INC.	KAISER PERMANENTE SENIOR ADVANTAGE	CA	HMO	GROUP	NON
H0543N	PACIFICARE OF CALIFORNIA/SECURE HORIZONS	SECURE HORIZONS	CA	HMO	IPA	PRO
H0543S	PACIFICARE OF CALIFORNIA/SECURE HORIZONS	SECURE HORIZONS	CA	HMO	IPA	PRO
H0545S	INTER VALLEY HEALTH PLAN, INC.	SERVICE TO SENIORS	CA	HMO	IPA	NON
H0547N	AETNA U.S. HEALTHCARE OF CALIFORNIA	AETNA U.S. HEALTHCARE GOLDEN MEDICARE	CA	HMO	IPA	PRO
H0558S	MAXICARE, A CALIFORNIA CORPORATION	MAX65	CA	HMO	IPA	PRO
H0562N	HEALTH NET OF CA	HEALTH NET SENIORITY PLUS	CA	HMO	IPA	NON
H0562S	HEALTH NET OF CA	HEALTH NET SENIORITY PLUS	CA	HMO	IPA	NON

REPORTING UNIT	ORGANIZATION NAME	PRODUCT NAME	STATE	PLAN TYPE	MODEL TYPE	TAX STATUS
H0564S	BLUE CROSS OF CALIFORNIA	BLUE CROSS SENIOR SECURE	CA	CMP	IPA	PRO
H0566N	HEALTH PLAN OF THE REDWOODS	MEDIPRIME	CA	HMO	IPA	NON
H0568N	NATIONAL MED, INC.	SECURITYCARE	CA	HMO	IPA	PRO
H0581S	CIGNA HEALTHCARE OF CALIFORNIA	CIGNA HEALTHCARE FOR SENIORS	CA	CMP	STAFF	PRO
H0583N	KAISER FOUNDATION HP, INC.	KAISER SENIOR ADVANTAGE	CA	HMO	GROUP	NON
H0584N	KAISER FOUNDATION HP, INC.	KAISER SENIOR ADVANTAGE	CA	HMO	GROUP	NON
H0590N	BLUE CROSS OF CALIFORNIA	BLUE CROSS SENIOR SECURE - FRESNO/MAD	CA	CMP	IPA	PRO
H0599N	CALIFORNIA PHYSICIANS SERVICES CORP.	SHIELD 65	CA	CMP	IPA	NON
H9016S	UHP HEALTHCARE	UNITED HEALTH PLAN FOR SENIORS	CA	HMO	GROUP	NON
H9104S	SCAN HEALTH PLAN	SCAN	CA	OTH	GROUP	NON
H0602	ROCKY MOUNTAIN HMO	ROCKY MOUNTAIN MEDICARE PLAN	CO	HMO	IPA	NON
H0603	HMO COLORADO, INC	BLUE ADVANTAGE FOR SENIORS	CO	HMO	IPA	PRO
H0609	PACIFICARE OF COLORADO, INC.	SECURE HORIZONS	CO	HMO	IPA	PRO
H0630	KAISER FOUNDATION HP OF CO	KAISER PERMANENTE SENIOR ADVANTAGE	CO	HMO	GROUP	NON
H0657	HMO HEALTH PLANS, INC.	HMO HEALTH PLANS	CO	HMO	IPA	NON
H0751	AETNA U.S. HEALTHCARE INC.	AETNA U.S. HEALTHCARE GOLDEN MEDICARE	CT	HMO	IPA	PRO
H0752	OXFORD HEALTH PLANS (CT), INC.	MEDICARE ADVANTAGE	CT	CMP	IPA	PRO
H0755	HEALTH NET OF CT	SMARTCHOICE	CT	HMO	IPA	PRO
H1010N	CAPITAL GROUP HEALTH SVC OF FL	CAPITAL HEALTH PLAN	FL	HMO	STAFF	NON
H1013S	FLA HEALTH PLAN HOLDINGS, II, L.L.C.	FOUNDATION SENIOR VALUE	FL	CMP	IPA	PRO
H1016N	AV-MED HEALTH PLAN INC.	AV-MED MEDICARE PLAN	FL	HMO	IPA	NON
H1016S	AV-MED HEALTH PLAN INC.	AV-MED MEDICARE PLAN	FL	HMO	IPA	NON
H1026S	HEALTH OPTIONS, INC.	MEDICARE AND MORE	FL	HMO	IPA	PRO
H1035N	FLORIDA HEALTH CARE PLAN, INC.	SENIOR CARE	FL	HMO	STAFF	NON
H1036N	HUMANA MEDICAL PLAN, INC.	HUMANA GOLD PLUS PLAN	FL	HMO	STAFF	PRO
H1036S	HUMANA MEDICAL PLAN, INC.	HUMANA GOLD PLUS PLAN	FL	HMO	STAFF	PRO
H1070N	PRUDENTIAL HLTH CARE PLAN, INC.	PRUDENTIAL HEALTHCARE SENIORCARE	FL	HMO	GROUP	PRO
H1071N	HEALTH OPTIONS, INC.	MEDICARE AND MORE	FL	HMO	GROUP	PRO
H1073S	PRUDENTIAL HLTH CARE PLAN, INC.	PRUDENTIAL HEALTHCARE SENIORCARE	FL	HMO	GROUP	PRO

REPORTING UNIT	ORGANIZATION NAME	PRODUCT NAME	STATE	PLAN TYPE	MODEL TYPE	TAX STATUS
H1074N	PRUDENTIAL HLTH CARE PLAN, INC.	PRUDENTIAL HEALTHCARE SENIORCARE	FL	HMO	IPA	PRO
H1076S	HIP HEALTH PLAN OF FLORIDA, INC.	HIP VIP MEDICARE PLAN	FL	CMP	IPA	NON
H1078S	NEIGHBORHOOD HEALTH PARTNERSHIP INC.	NEIGHBORHOOD HLTH PARTNERSHIP THE SENIOR HLTH CHOICE	FL	CMP	IPA	NON
H1080N	UNITED HEALTHCARE OF FL, INC.	MEDICARE COMPLETE	FL	CMP	IPA	PRO
H1081N	PRUDENTIAL HLTH CARE PLAN, INC.	PRUDENTIAL HEALTHCARE SENIORCARE	FL	HMO	GROUP	PRO
H1082N	HEALTH OPTIONS, INC.	MEDICARE AND MORE	FL	HMO	IPA	PRO
H1087N	CIGNA HEALTHCARE OF FLORIDA, INC.	CIGNA HEALTHCARE FOR SENIORS	FL	CMP	GROUP	PRO
H1098N	CIGNA HEALTHCARE OF FLORIDA, INC.	CIGNA HEALTHCARE FOR SENIORS	FL	CMP	GROUP	PRO
H9011S	UNITED HEALTHCARE OF FLORIDA INC.	MEDICARE COMPLETE	FL	CMP	STAFF	PRO
H1155	UNITED HEALTHCARE OF GEORGIA, INC.	UNITED FOR SENIORS	GA	CMP	IPA	PRO
H1156	AETNA U.S.HEALTHCARE OF GEORGIA, INC.	AETNA U.S. HEALTHCARE GOLDEN MEDICARE	GA	HMO	IPA	PRO
H1168	BLUE CROSS BLUE SHIELD HEALTH CARE GA	BLUECHOICE PLATINUM	GA	CMP	IPA	PRO
H1170	KAISER FOUNDATION HP OF GA, INC.	SENIOR ADVANTAGE	GA	HMO	GROUP	NON
H1230	KAISER FOUNDATION HP, INC.	SENIOR PLAN	HI	HMO	GROUP	NON
H1251	HAWAII MED. SRVC. ASSN.	65 C PLUS	HI	CMP	IPA	NON
H1651	MEDICAL ASSOCIATES HEALTH PLAN, INC.	MEDICARE ADVANTAGE	IA	CMP	GROUP	PRO
H1349	REGENCE BLUESHIELD OF IDAHO	HEALTHSENSE 65	ID	CMP	IPA	NON
H1406	HUMANA HEALTH PLAN, INC.	HUMANA GOLD PLUS PLAN	IL	HMO	IPA	NON
H1449	UNICARE HEALTH PLANS OF THE MIDWEST, INC.	N/A	IL	N/A	N/A	N/A
H9045	UNITED HEALTHCARE OF ILLINOIS, INC.	MEDICARE COMPLETE	IL	HMO	IPA	PRO
H1553	THE M PLAN, INC.	SENIOR SECURECARE	IN	HMO	IPA	PRO
H1557	ANTHEM INSURANCE COMPANIES, INC.	ANTHEM SENIOR ADVANTAGE	IN	CMP	IPA	PRO
H9028	MAXICARE INDIANA, INC.	MAX 65 PLUS	IN	HMO	IPA	PRO
H1750	PREFERRED PLUS OF KANSAS, INC.	PREFERRED SENIOR CARE	KS	CMP	IPA	PRO
H1751	COVENTRY HEALTH CARE OF KANSAS, INC.	COVENTRY HEALTH CARE ADVANTRA	KS	HMO	GROUP	NON
H1890	HUMANA HEALTH PLAN, INC.	HUMANA GOLD PLUS PLAN	KY	CMP	IPA	PRO
H1951	OCHSNER HEALTH PLAN	TOTAL HEALTH 65	LA	HMO	GROUP	PRO
H1955	GULF SOUTH HEALTH PLANS, INC.	GULF SOUTH HEALTH PLANS, INC.	LA	HMO	IPA	PRO
H1958	THE OATH, INC.	SMARTPLAN 65	LA	CMP	IPA	PRO

REPORTING UNIT	ORGANIZATION NAME	PRODUCT NAME	STATE	PLAN TYPE	MODEL TYPE	TAX STATUS
H1962	AETNA U.S. HEALTHCARE , INC.	AETNA U.S.HEALTHCARE GOLDEN MEDICARE	LA	CMP	IPA	PRO
H2206	HARVARD PILGRIM HEALTH CARE	FIRST SENIORITY	MA	HMO	STAFF	NON
H2256	TUFTS ASSOCIATED HMO, INC.	SECURE HORIZONS TUFTS HEALTH PLAN FOR SENIORS	MA	HMO	IPA	NON
H2261	BLUE CROSS & BLUE SHIELD-MASSACHUSETTS	BLUE CARE 65	MA	CMP	IPA	NON
H4153	UNITED HEALTH PLANS OF NEW ENGLAND, INC.	MEDICARE COMPLETE	MA	CMP	IPA	PRO
H9001	FALLON COMMUNITY HEALTH PLAN, INC.	SENIOR PLAN	MA	HMO	GROUP	NON
H2101	FREE STATE HEALTH PLAN	CAREFIRST	MD	HMO	GROUP	PRO
H2151	UNITED HEALTHCARE OF THE MID-ATLANTIC	MEDICARE COMPLETE	MD	CMP	IPA	PRO
H2312	HEALTH ALLIANCE PLAN OF MICHIGAN	HAP SENIOR PLUS	MI	HMO	GROUP	NON
H2350	BLUE CARE NETWORK - SOUTHEAST MICHIGAN	MEDICARE BLUE	MI	HMO	IPA	NON
H2353	MCARE	MCARE SENIOR PLAN	MI	CMP	IPA	NON
H9005	GROUP HEALTH PLAN, INC.	GROUP HEALTH SENIORS	MN	HMO	STAFF	NON
H9006	MEDICA HEALTH PLANS	MEDICA	MN	CMP	IPA	NON
H2649	HUMANA KANSAS CITY, INC.	HUMANA GOLD PLUS PLAN	MO	HMO	STAFF	PRO
H2652	BLUE CROSS BLUE SHIELD OF KANSAS CITY	TOTAL HEALTH CARE 65	MO	HMO	IPA	NON
H2654	UNITED HEALTHCARE OF THE MIDWEST, INC.	MEDICARE COMPLETE	MO	CMP	IPA	PRO
H2659	HMO MISSOURI, INC.	BLUECHOICE SENIOR	MO	HMO	IPA	PRO
H2663	GROUP HEALTH PLAN, INC.	ADVANTRA	MO	HMO	GROUP	PRO
H2666	HEALTHNET	HEALTHNET SENIOR EXCEL	MO	CMP	GROUP	PRO
H3449	PARTNERS NATIONAL HEALTH PLANS OF NC, INC.	PARTNERS MEDICARE CHOICE	NC	CMP	IPA	PRO
H3455	QUALCHOICE OF NORTH CAROLINA INC,	QUALCHOICE MEDICARE GOLD	NC	CMP	IPA	PRO
H3503	HEART OF AMERICA HMO	HEART OF AMERICA MEDICARE COORDINATED CARE PLAN	ND	HMO	GROUP	NON
H2802	UNITED HEALTHCARE OF THE MIDLANDS, INC.	MEDICARE COMPLETE	NE	CMP	IPA	PRO
H2204	HARVARD PILGRIM HEALTH CARE OF NEW ENGLAND	SENIORCARE	NH	HMO	GROUP	NON
H3107	OXFORD HEALTH PLANS (NJ), INC.	OXFORD MEDICARE ADVANTAGE	NJ	CMP	IPA	PRO
H3152	AETNA U.S. HEALTHCARE, INC.	AETNA U.S. HEALTHCARE GOLDEN MEDICARE PLAN	NJ	HMO	IPA	PRO
H3154	HORIZON HEALTHCARE OF NEW JERSEY, INC.	MEDICARE BLUE	NJ	CMP	IPA	PRO
H3156	AMERIHEALTH HMO INC.	AMERIHEALTH 65	NJ	HMO	IPA	PRO
H3204	PRESBYTERIAN HEALTH PLAN	PRESBYTERIAN SENIOR CARE	NM	HMO	IPA	PRO

REPORTING UNIT	ORGANIZATION NAME	PRODUCT NAME	STATE	PLAN TYPE	MODEL TYPE	TAX STATUS
H3249	QUALMED, NEW MEXICO	QUALMED SENIOR SECURITY	NM	HMO	IPA	PRO
H3251	LOVELACE HEALTH PLAN, INC.	LOVELACE SENIOR PLAN	NM	HMO	GROUP	PRO
H3253	LOVELACE HEALTH PLAN, INC.	LOVELACE SENIOR PLAN	NM	HMO	GROUP	PRO
H2931	HEALTH PLAN OF NEVADA, INC.	SENIOR DIMENSIONS	NV	HMO	GROUP	PRO
H2949	PACIFICARE OF NEVADA, INC.	SECURE HORIZONS	NV	HMO	IPA	PRO
H2960	HOMETOWN HEALTH PLAN	SENIOR CARE PLUS HEALTH PLAN	NV	HMO	IPA	NON
H2961	HEALTH PLAN OF NEVADA	SENIOR DIMENSIONS	NV	OTH	GROUP	
H3305N	ROCHESTER AREA HMO/ DBA PREFERRED CARE	PREFERRED CARE GOLD	NY	HMO	IPA	NON
H3307S	OXFORD HEALTH PLANS (NY) INC.	OXFORD MEDICARE ADVANTAGE	NY	CMP	IPA	PRO
H3312S	AETNA U.S. HEALTHCARE, INC.	AETNA U.S.HEALTHCARE GOLDEN MEDICARE PLAN	NY	HMO	IPA	PRO
H3330S	HIP OF GREATER NEW YORK	HIP VIP MEDICARE PLAN	NY	CMP	GROUP	NON
H3351N	UNIVERA HEALTHCARE/MEDICARE PLUS	SENIORCHOICE, A UNIVERA HEALTHCARE PROGRAM	NY	HMO	STAFF	NON
H3356N	EXCELLUS HEALTH PLAN, INC.	BLUE CHOICE SENIOR/SENIORCARE	NY	CMP	IPA	NON
H3359S	MANAGED HEALTH, INC.	MANAGED HEALTH 65 PLUS	NY	CMP	GROUP	NON
H3361N	WELLCARE OF NEW YORK, INC.	SENIOR HEALTH PLAN	NY	CMP	IPA	PRO
H3362N	INDEPENDENT HEALTH ASSOC.	INDEPENDENT HEALTH'S ENCOMPASS 65	NY	HMO	IPA	NON
H3365S	CIGNA HEALTHCARE OF NEW YORK	CIGNA HEALTHCARE FOR SENIORS	NY	CMP	GROUP	PRO
H3366S	HEALTH NET OF NY	PHS/SMARTCHOICE	NY	HMO	IPA	PRO
H3370S	EMPIRE BLUE CROSS-BLUE SHIELD	BLUECHOICE SENIOR PLAN	NY	CMP	IPA	NON
H3378S	MDNY HEALTHCARE, INC.	MDSELECT 65	NY	CMP	IPA	PRO
H9101S	ELDERPLAN, INC. - SHMO	ELDERPLAN	NY	OTH	GROUP	NON
H3607E	KAISER FOUNDATION HP OF OHIO	MEDICARE PLUS	OH	HMO	GROUP	NON
H3649W	FAMILY HEALTH PLAN, INC.	SENIORSENSE	OH	CMP	IPA	NON
H3653W	PARAMOUNT CARE, INC.	PARAMOUNT ELITE	OH	CMP	IPA	PRO
H3654E	PRUDENTIAL HEALTH CARE PLAN OF N. OHIO	PRUDENTIAL HEALTHCARE SENIORCARE	OH	CMP	GROUP	PRO
H3655E	COMMUNITY INSURANCE COMPANY	ANTHEM SENIOR ADVANTAGE	OH	CMP	GROUP	NON
H3655W	COMMUNITY INSURANCE COMPANY	ANTHEM SENIOR ADVANTAGE	OH	CMP	GROUP	NON
H3656W	AETNA U.S. HEALTHCARE, INC.	AETNA U.S.HEALTHCARE GOLDEN MEDICARE	OH	CMP	IPA	PRO
H3657E	QUALCHOICE HEALTH PLAN	QUALCHOICE MEDICARE PRIME	OH	CMP	IPA	PRO
H3658W	PACIFICARE OF OHIO, INC.	SENIOR PLAN	OH	HMO	IPA	PRO
H3659E	UNITED HEALTHCARE OF OHIO, INC.	MEDICARE COMPLETE	OH	CMP	IPA	PRO

REPORTING UNIT	ORGANIZATION NAME	PRODUCT NAME	STATE	PLAN TYPE	MODEL TYPE	TAX STATUS
H3659O	UNITED HEALTHCARE OF OHIO, INC.	MEDICARE COMPLETE	OH	CMP	IPA	PRO
H3659W	UNITED HEALTHCARE OF OHIO, INC.	MEDICARE COMPLETE	OH	CMP	IPA	PRO
H3660E	SUMMACARE INC.	SUMMACARE SECURE	OH	CMP	GROUP	PRO
H3664E	PRIMETIME MEDICAL INSURANCE COMPANY	PRIMETIME HEALTH PLAN	OH	CMP	GROUP	PRO
H3666W	HUMANA HEALTH PLAN OF OHIO, INC.	HUMANA GOLD PLUS PLAN	OH	HMO	IPA	PRO
H3749	PACIFICARE OF OKLAHOMA, INC.	SECURE HORIZONS	OK	HMO	GROUP	PRO
H3755	COMMUNITY CARE HMO, INC	COMMUNITY CARE HMO SENIOR HEALTH PLAN	OK	HMO	IPA	PRO
H3756	HEALTHCARE OKLAHOMA, INC.	PERFECT HARMONY	OK	CMP	IPA	PRO
H3757	BLUELINCS HMO, INC.	BLUELINCS SENIOR	OK	HMO	IPA	PRO
H3805	PACIFICARE OF OREGON, INC.	SECURE HORIZONS	OR	HMO	IPA	PRO
H3851	REGENCE HMO OREGON	PREFERRED CHOICE 65	OR	HMO	IPA	NON
H3856	REGENCE HMO OREGON	FIRST CHOICE 65	OR	HMO	IPA	NON
H9003	KAISER FOUNDATION HP OF THE N W	KAISER-NW	OR	HMO	GROUP	NON
H9047	PROVIDENCE HEALTH PLAN	PROVIDENCE MEDICARE EXTRA	OR	HMO	IPA	NON
H9049	REGENCE HEALTH MAINTENANCE OF OREGON	FIRST CHOICE 65	OR	HMO	IPA	PRO
H9103	KAISER FOUNDATION HP OF THE N W	KAISER MEDICARE - PLUS II	OR	HMO	GROUP	NON
H3931	AETNA U.S. HEALTHCARE,INC.	US HEALTHCARE	PA	HMO	IPA	PRO
H3949	HEALTH NET OF PENNSYLVANIA	PHS SMARTCHOICE	PA	HMO	GROUP	PRO
H3952	KEYSTONE HEALTH PLAN EAST, INC.	KEYSTONE 65	PA	HMO	IPA	PRO
H3953	HMO OF NORTHEASTERN PA, INC.	FIRST PRIORITY 65	PA	HMO	IPA	NON
H3954	GEISINGER HEALTH PLAN	GEISINGER GOLD	PA	HMO	GROUP	NON
H3957	KEYSTONE HEALTH PLAN WEST, INC.	SECURITY BLUE	PA	HMO	IPA	PRO
H3959	HEALTHAMERICA PENNSYLVANIA, INC.	ADVANTRA	PA	HMO	GROUP	PRO
H3962	KEYSTONE HEALTH PLAN CENTRAL, INC.	SENIOR BLUE	PA	CMP	IPA	PRO
H3963	INDEPENDENCE BLUE CROSS	PERSONAL CHOICE 65	PA	OTH	OTHER	NON
H4102	UNITED HEALTH PLANS OF NEW ENGLAND, INC.	MEDICARE COMPLETE	RI	CMP	IPA	PRO
H4152	COORDINATED HEALTH PARTNERS	BLUE CHIP FOR MEDICARE	RI	CMP	GROUP	PRO
H4452	HEALTH 1*2*3	HEALTH 1*2*3 PLATINUM	TN	CMP	IPA	PRO
H4454	HEALTH NET HMO, INC.	HEALTH NET 65	TN	CMP	IPA	PRO
H4507W	SOUTHWEST TEXAS HMO, INC.	NYLCARE 65	TX	HMO	IPA	PRO
H4510E	HUMANA HP OF TEXAS	HUMANA GOLD PLUS PLAN	TX	HMO	IPA	PRO
H4558E	TEXAS GULF COAST HMO, INC.	NYLCARE 65	TX	HMO	IPA	PRO

REPORTING UNIT	ORGANIZATION NAME	PRODUCT NAME	STATE	PLAN TYPE	MODEL TYPE	TAX STATUS
H4560E	PRUDENTIAL HEALTH CARE PLAN, INC.	PRUDENTIAL HEALTHCARE SENIORCARE	TX	HMO	IPA	PRO
H4563E	PRUDENTIAL HEALTH CARE PLAN, INC.	PRUDENTIAL HEALTHCARE SENIORCARE	TX	HMO	GROUP	PRO
H4564E	SCOTT AND WHITE HEALTH PLAN	SENIORCARE	TX	CMP	GROUP	NON
H4565E	TEXAS HEALTH CHOICE, L.C.	GOLDEN CHOICE	TX	HMO	IPA	PRO
H4569E	CIGNA HEALTHCARE OF TEXAS, INC.	CIGNA HEALTHCARE FOR SENIORS	TX	CMP	GROUP	PRO
H4590E	PACIFICARE OF TEXAS, INC.	SECURE HORIZONS	TX	HMO	IPA	PRO
H4590W	PACIFICARE OF TEXAS, INC.	SECURE HORIZONS	TX	HMO	IPA	PRO
H4951	CIGNA HEALTHCARE OF VIRGINIA, INC.	CIGNA HEALTHCARE FOR SENIORS	VA	CMP	IPA	PRO
H5005	PACIFICARE OF WASHINGTON, INC.	SECURE HORIZONS	WA	CMP	IPA	PRO
H5050	GROUP HEALTH COOP OF PUGET SOUND	GROUP HEALTH MEDICARE	WA	CMP	STAFF	NON
H5063	OPTIONS HEALTH CARE, INC.	OPTIONS HEALTH CARE	WA	CMP	GROUP	PRO
H5066	PREMERA BLUE CROSS	MSC CLASSIC CARE	WA	CMP	GROUP	NON
H5071	HEALTHPLUS	SENIOR PARTNERS	WA	CMP	IPA	NON
H5253	UNITEDHEALTHCARE OF WISCONSIN, INC.	UNITEDHEALTHCARE OF WISCONSIN	WI	CMP	IPA	PRO
H5254	NETWORK HEALTH PLAN OF WISCONSIN, INC.	NETWORK SENIOR PLUS	WI	CMP	GROUP	PRO
H5256	MEDICAL ASSOCIATES CLINIC HEALTH PLAN	MEDICARE ADVANTAGE	WI	CMP	GROUP	NON
H5102	HEALTH PLAN OF THE UPPER OHIO VALLEY	HP UPPER OH VALLEY	WV	HMO	IPA	NON

KEY TO THE PARTICIPATING PLANS TABLE:

CATEGORY	ABBREVIATION	DEFINITION
Plan Type	CMP	**Competitive Medical Plan** A prepaid health plan which may be a separate legal entity or a line of business of another organization currently serving a commercial market and found eligible under Section 1876 to negotiate a contract with CMS to serve Medicare enrollees.
	HMO	**Health Maintenance Organization** A prepaid health plan, as defined by Title XIII of the Public Health Service Act and its amendments, which is a separate legal entity and provides comprehensive health maintenance and treatment services on a prepaid basis.
	OTH	**Other** An HCPP, Health Care Prepayment Plan (part B services), or a demonstration organization.
	N/A	**Not Available**
Model Type	GROUP	**Group Practice Model** A health maintenance organization model in which the HMO contracts with one or more medical group(s) on a capitated basis for the provision of services. The physicians practice in a common facility and use common professional, technical and administrative staff. Income is pooled and distributed according to an agreed upon plan.
	STAFF	**Staff Model** An organizational form whereby the HMO employs the necessary medical providers to provide its medical services.
	IPA	**Individual Practice Association** An HMO delivery model in which the HMO contracts with a physician organization, which, in turn, contracts with the individual physicians. The IPA physicians practice in their own offices and continue to see their fee-for-service patients. The HMO reimburses the IPA on a capitated basis.
	OTHER	**Other** A mixed model type.
	N/A	**Not Available**
Tax Status	PRO	**For Profit**
	NON	**Not For Profit**

Definitions of Key Terms

ASCII	A simple raw data file (also referred to as a text or flat file)
ACTIVITIES OF DAILY LIVING (ADLS)	Activities of daily living are the everyday activities involved in personal care such as feeding, dressing, bathing, getting in or out of chairs, toileting, and walking. Physical or mental disabilities can restrict a person's ability to perform personal ADLs.
ANALYTIC SAMPLE	The analytic sample for the Medicare HOS Performance Measurement Report is limited to those individuals 65 years of age or older with a baseline PCS and/or MCS score and a valid reporting unit (managed care plan) at follow up. For the *Cohort I* Performance Measurement there are 122,444 beneficiaries in the analytic sample.
BENEFICIARY	An individual receiving benefits from the Medicare program
CASE MIX ADJUSTMENT	This is a method which adjusts the resulting data for patient characteristics that are known to be related to systematic biases in the way people respond to survey questions. This is accomplished using logistic regression models, and assumes that the control variables (covariates) have been measured accurately and that the models are correctly specified and applicable to all cases. The Medicare HOS *Cohort I* Performance Measurement case mix adjustment was performed by Health Assessment Lab (HAL).
CATI	Computer Assisted Telephone Interviewing
CENTERS FOR MEDICARE & MEDICAID SERVICES (CMS)	The Centers for Medicare & Medicaid Services, formerly the Health Care Financing Administration, is responsible for administering Medicare, Medicaid, and Child Health Insurance Programs.
CIB	The *Cohort I Baseline* Medicare Health Outcomes Survey was conducted in 1998.
CIR	The *Cohort I Follow Up* Medicare Health Outcomes Survey is a remeasurement of the respondents originally surveyed in 1998.

COHORT	A cohort is a group of people who share a common designation (e.g., "Medicare beneficiaries"), experience, or condition. In terms of HOS, *Cohort I* refers to the group of Medicare beneficiaries first surveyed in 1998.
COMPETITIVE MEDICAL PLAN (CMP)	A competitive medical plan is a prepaid health plan which may be a separate legal entity, or a line of business of another organization, currently serving a commercial market and found eligible under Section 1876 to negotiate a contract with CMS to serve Medicare enrollees. This is outdated for M+CO contracts as of 2001.
CPM	NCQA's Committee on Performance Measurement that oversees the development of the HEDIS® measurement set
DATA CLEANING	This is the process by which discrepancies within the data are identified and resolved, including issues related to file structure, record numbers, range, and consistency. Data cleaning for all HOS cohorts is conducted by Health Services Advisory Group, Inc. (HSAG).
DEPRESSION SCREEN	A participant in the Medicare HOS is considered to have a positive depression screen when he or she answers "yes" to *any* of the three depression questions (numbers 38, 39 or 40). Individuals with a positive depression screen may be at risk for depressive disorders. These individuals may experience poor outcomes.
DISENROLLMENT	Beneficiaries no longer in their original M+CO at the time of follow up are considered to be disenrolled. There are two types of disenrollment: *Involuntary*: The beneficiary's plan is no longer a part of HOS as of remeasurement in 2000. *Voluntary*: The beneficiary's plan continues in HOS; however, the beneficiary is no longer enrolled in the health plan as of remeasurement in 2000.
ELIGIBLE SAMPLE	The *Cohort I Follow Up eligible sample* is limited to those seniors (65 years of age or older at baseline) who were alive at the time of follow up, had a baseline PCS and/or MCS score, and were still enrolled in their original plan in HOS. There are 82,625 beneficiaries in the *Cohort I Follow Up eligible sample*.
ESRD	End Stage Renal Disease

GROUP PRACTICE MODEL	A group practice model is an HMO model in which the HMO contracts with one or more medical group(s) on a capitation basis for the provision of services. The physicians practice in a common facility and use common professional, technical and administrative staff. Income is pooled and distributed according to an agreed upon plan.
HAL	Health Assessment Lab 15 Court Square, Suite 400 Boston, MA 02108
HEALTH CARE FINANCING ADMINISTRATION (HCFA)	See the Centers for Medicare & Medicaid Services (CMS)
HEALTH MAINTENANCE ORGANIZATION (HMO)	A health maintenance organization is a prepaid health plan, as defined by Title XIII of the Public Health Service Act and its amendments, which is a separate legal entity and provides comprehensive health maintenance and treatment services on a prepaid basis.
HEDIS®	Health Plan Employer Data and Information Set is the most widely used set of performance measures in the managed care industry, and is developed and maintained by NCQA. Volume 6 of the 2000 HEDIS® Manual is included in this report (section G).
HER	Health Economics Research 1029 Vermont Avenue NW, Suite 850 Washington, DC 20005
HIC NUMBER (HIC#)	Health Insurance Claim Number (usually the Medicare number)
HOS MEASURE	The Medicare Health Outcomes Survey measure is an assessment of a health plan's ability to maintain or improve the physical and mental health functioning of its Medicare beneficiaries over a two year period of time.
HSAG	Health Services Advisory Group, Inc. 301 E. Bethany Home Rd., Suite B-157 Phoenix, AZ 85012-1265

INDIVIDUAL PRACTICE ASSOCIATION (IPA)	An individual practice association is an HMO delivery model in which the HMO contracts with a physician organization, which, in turn, contracts with the individual physicians. The IPA physicians practice in their own offices and continue to see their fee-for-service patients. The HMO reimburses the IPA on a capitated basis.
M+CO	Medicare + Choice Organization
MEDICARE HEALTH OUTCOMES SURVEY (HOS)	The Medicare Health Outcomes Survey is the first health outcomes measure for the Medicare population in managed care settings. It was developed in 1997 as the Health of Seniors survey in response to the growing number of Medicare beneficiaries receiving their health care through M+COs. The Medicare HOS assesses an M+CO's ability to maintain or improve the physical and mental health functioning of its Medicare members over time. The survey is administered to a random sample of members from each M+CO at the beginning and end of a two year period. The HOS results are used to monitor the health of the general population, to evaluate treatment outcomes and procedures, and to provide external performance measurement.
MEDICARE HOS BASELINE REPORT	The Medicare Health Outcomes Survey baseline report is produced and disseminated after each baseline cohort data collection is completed. It is part of a larger effort by CMS to improve the health care industry's capacity to sustain and improve health status and functioning within the senior population.
MENTAL COMPONENT SUMMARY (MCS) SCORE	The Mental Component Summary score is derived from the SF-36® survey, and is a reliable and valid measure of mental health. The measure is highly correlated to the Mental Health (MH), Role-Emotional (RE), and Social Functioning (SF) SF-36® scales.
MISSING DATA ESTIMATION (MDE) SCORING	Missing data estimation is a feature of the SF-36® algorithms used in the calculation of PCS and MCS scores when one or more questionnaire item responses are missing. The scoring utility uses the pattern of responses across completed items to estimate the most likely response to each missing item and it uses all available SF-36® scale scores to estimate PCS and MCS summary scores.

NCQA	National Committee for Quality Assurance 2000 L St, NW, Suite 500 Washington, DC 20036
OUTCOME	The Medicare HOS defines outcome as a change in health over time, which is characterized in terms of the direction and magnitude for a given respondent. The three major Medicare HOS outcomes are death, change in physical health, and change in mental health. The PCS and MCS performance measures describe the changes in physical and mental health.
OUTLIERS	Cases or plans displaying characteristics which are significantly different from the norm
PERFORMANCE MEASUREMENT SCORES	The adjusted differences between the HOS baseline and two year follow up results, which are presented as better, same or worse than expected for PCS and MCS
PHYSICAL COMPONENT SUMMARY (PCS) SCORE	The Physical Component Summary score is derived from the SF-36® survey, and is a reliable and valid measure of physical health. The measure is highly correlated to the Physical Functioning (PF), Role-Physical (RP), and Bodily Pain (BP) SF-36® scales.
PRO	Peer Review Organization
PROXY	An individual who completed a survey on behalf of the beneficiary
QISMC	Quality Improvement System for Managed Care
RASCH MODEL	This is a mathematical model, also known as the simple logistic model, which posits a relationship between the probability of a person completing a task and the difference between the ability of the person and the difficulty of the task. It is mathematically equivalent to the one-parameter model in item response theory. The Rasch model has been extended in various ways, e.g., to handle scalar responses or multiple facets accounting for the "difficulty" of a task.

RESPONDENT SAMPLE	The *Cohort I Follow Up respondent sample* for the Medicare HOS is limited to those seniors eligible for remeasurement who have a follow up PCS and/or MCS score. There are 71,094 beneficiaries in the *Cohort I Follow Up respondent sample*.
RESPONSE RATE	The Medicare HOS response rate is the number of beneficiaries who have a PCS and/or MCS score, divided by the number of beneficiaries sampled.
RISK ADJUSTMENT	This is a method which adjusts for multiple factors which may impact the outcome of interest. This is accomplished using regression models, and assumes that the control variables (covariates) have been measured accurately and that the models are correctly specified and applicable to all cases.
SAS	A software package for statistical analysis
SF-36®	SF-36® Health Survey
STAFF MODEL	An organizational form whereby the HMO employs the necessary medical providers to provide its medical services
TECHNICAL EXPERT PANEL (TEP)	The Medicare HOS Technical Expert Panel oversees the development of the Medicare HOS measure, and is comprised of individuals with specific expertise in the health care industry and outcomes measurement.
VENDOR	Independent survey organization that is trained and certified by NCQA to administer the HOS Survey

HOS Partners

There are numerous individuals who have contributed to the development and success of the Medicare Health Outcomes Survey. It has been their sustained and committed efforts over time that have steadily moved the project forward from its initial inception in 1997 to the present.

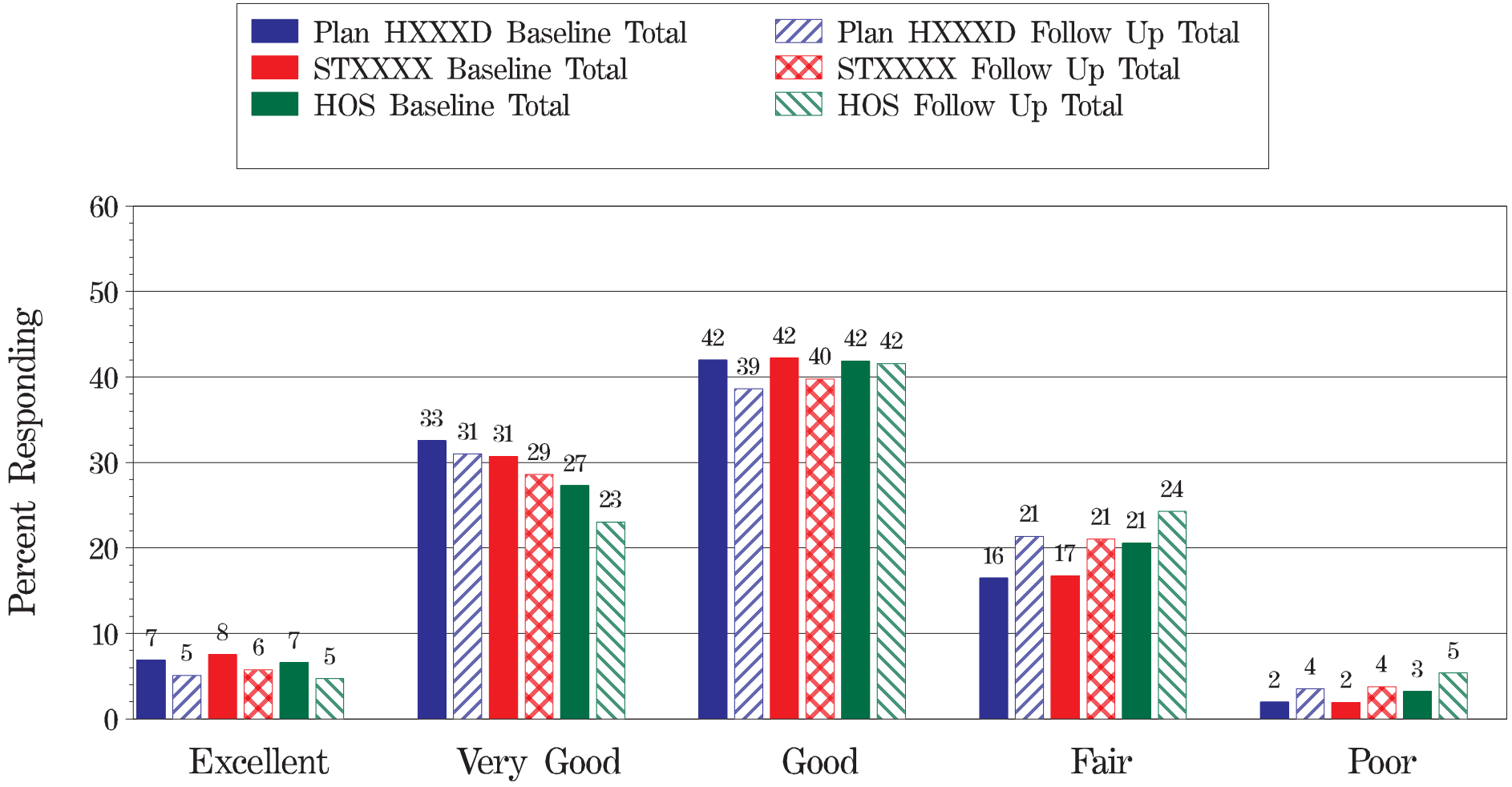
Please refer to the HOS Partners section of the CMS HOS Website for further details. The HOS Partners information is updated on a regular basis.

CD-ROM

The accompanying CD includes all of the information from sections A, B, C, D, E, F, G, and I. Additionally, the CD contains supplementary graphical depictions of plan level results. These graphs compare trends from baseline to follow up for the *Cohort I Follow Up respondent sample* (71,094) with an emphasis on health status indicators and demographics. The contents are in the form of an Adobe Acrobat portable document file (.pdf). A free Adobe Acrobat Reader can be downloaded from Adobe's website (*www.adobe.com*).

FIGURES

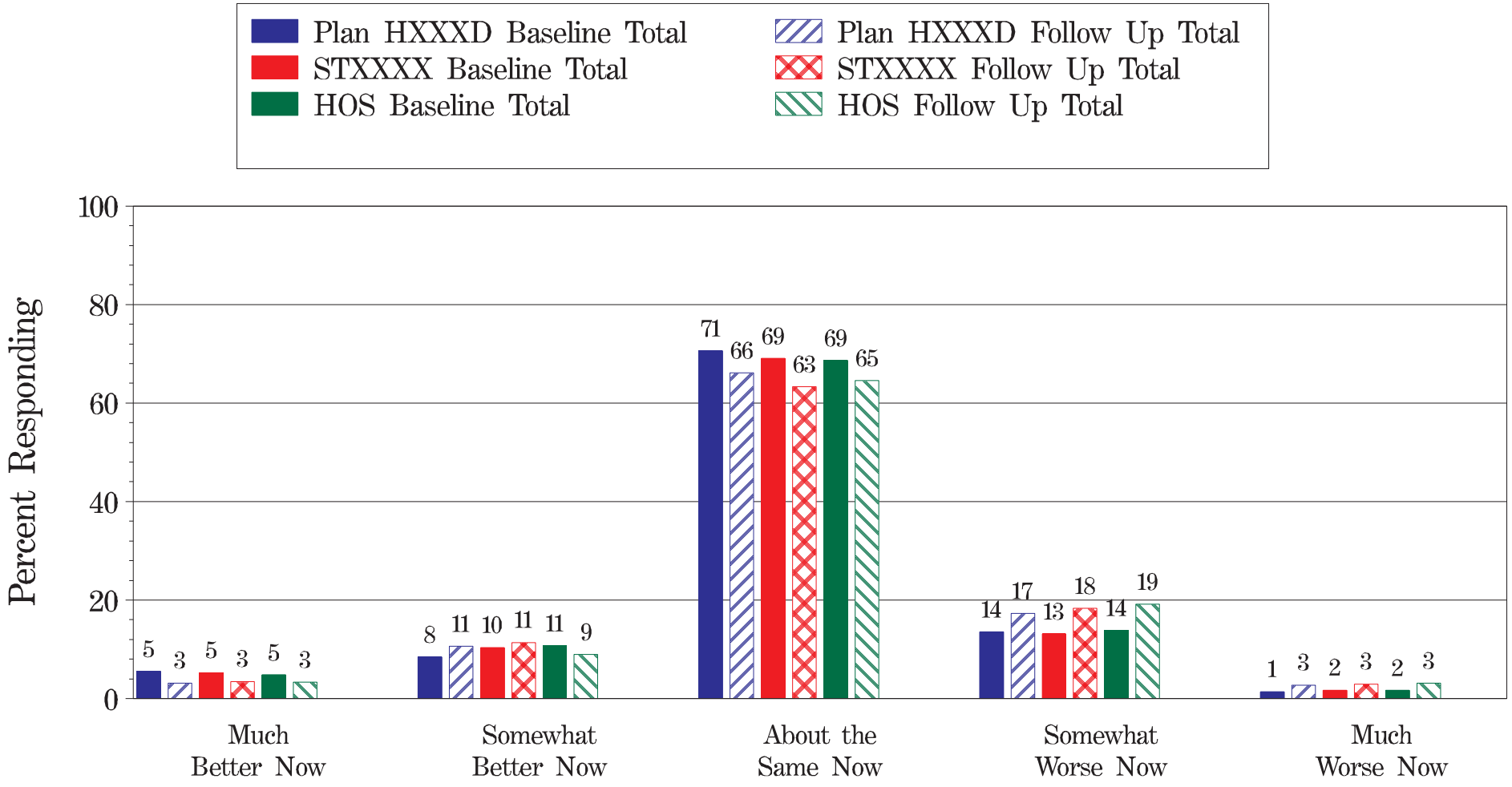
Figure 1: General Health Question for Plan HXXXD (N = 510), STXXXX Total (N = 2,031), and HOS Total (N = 71,094)



COHORT I PERFORMANCE MEASUREMENT REPORT

Responses to question #1: "In general, would you say your health is:"
Sample is limited to those beneficiaries who are 65 or older, had a PCS/MCS score at Baseline, were in a participating managed care plan, and had a PCS/MCS score at Follow Up.
Totals may not add to 100% due to rounding and nonrespondents to the question.
Nonrespondents to the question make up a very small percentage, in most cases less than 1%.

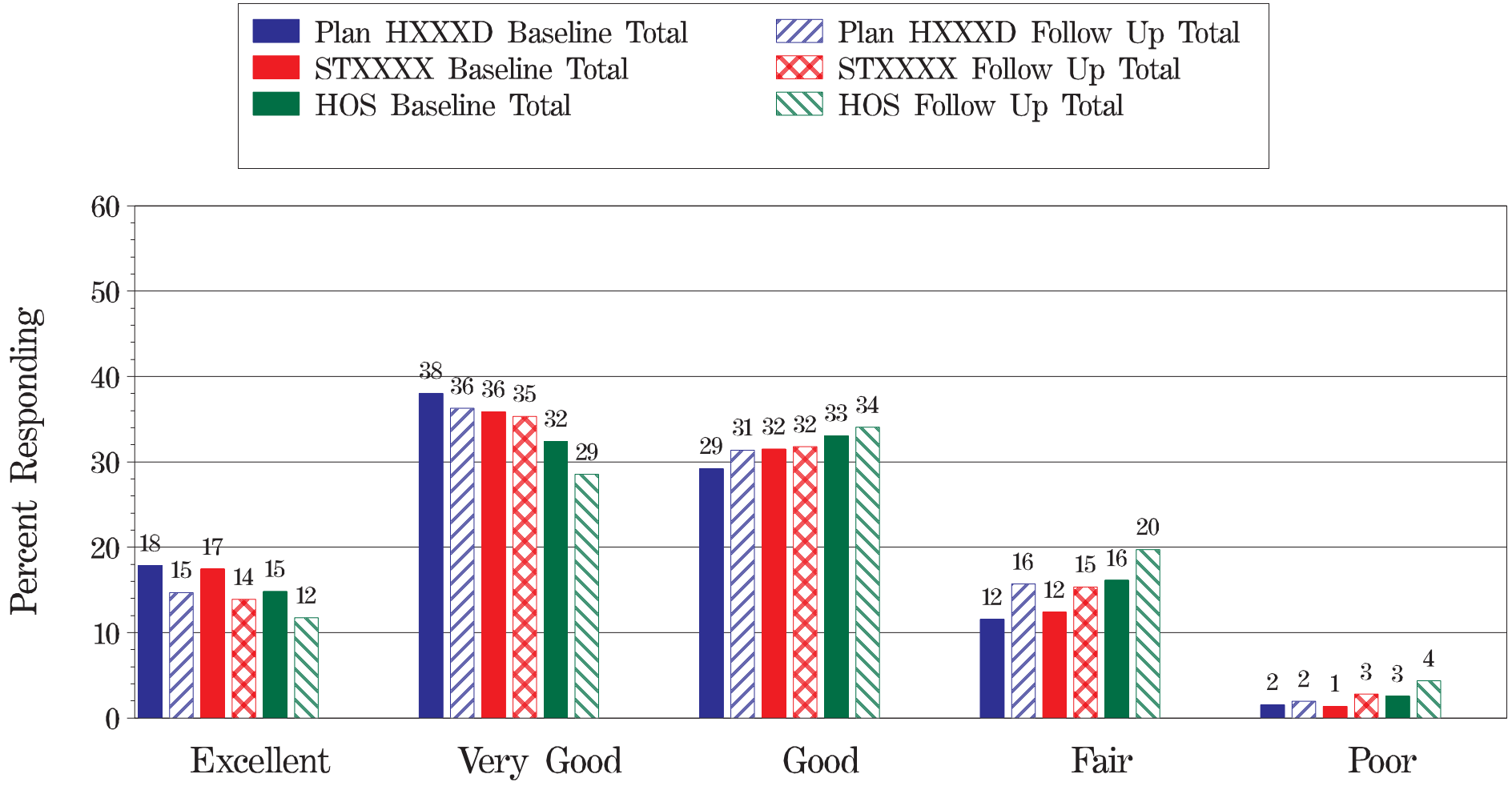
Figure 2: Health Transition Question for Plan HXXXD (N=510), STXXXX Total (N=2,031), and HOS Total (N=71,094)



COHORT I PERFORMANCE MEASUREMENT REPORT

Responses to question #2: "Compared to one year ago, how would you rate your health in general now?"
Sample is limited to those beneficiaries who are 65 or older, had a PCS/MCS score at Baseline, were in a participating managed care plan, and had a PCS/MCS score at Follow Up.
Totals may not add to 100% due to rounding and nonrespondents to the question.
Nonrespondents to the question make up a very small percentage, in most cases less than 1%.

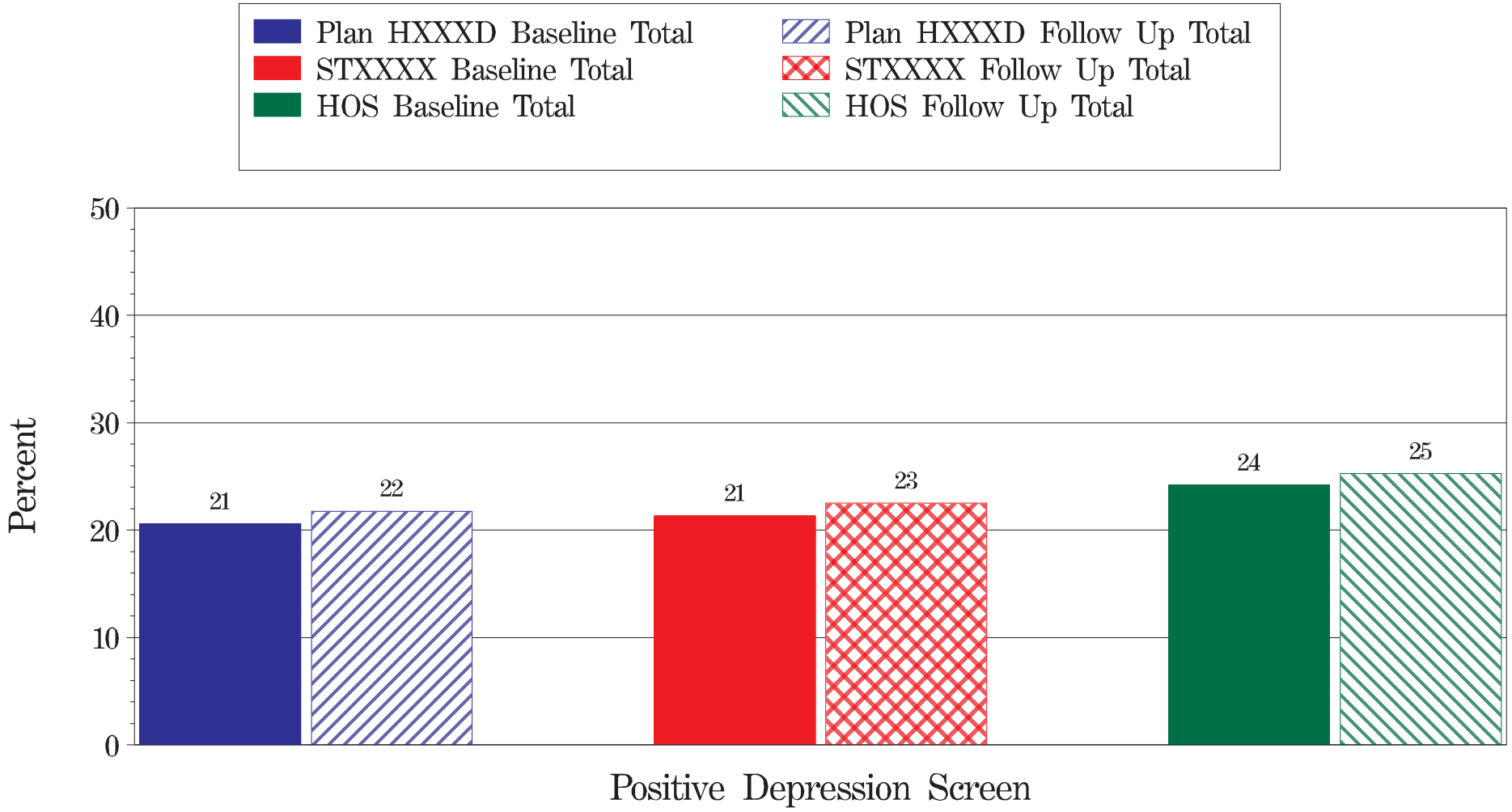
Figure 3: Comparative Health Question for Plan HXXXD (N = 510), STXXXX Total (N = 2,031), and HOS Total (N = 71,094)



COHORT I PERFORMANCE MEASUREMENT REPORT

Responses to question #41: "In general, compared to other people your age, would you say your health is:"
Sample is limited to those beneficiaries who are 65 or older, had a PCS/MCS score at Baseline,
were in a participating managed care plan, and had a PCS/MCS score at Follow Up.
Totals may not add to 100% due to rounding and nonrespondents to the question.
Nonrespondents to the question make up a very small percentage, in most cases less than 1%.

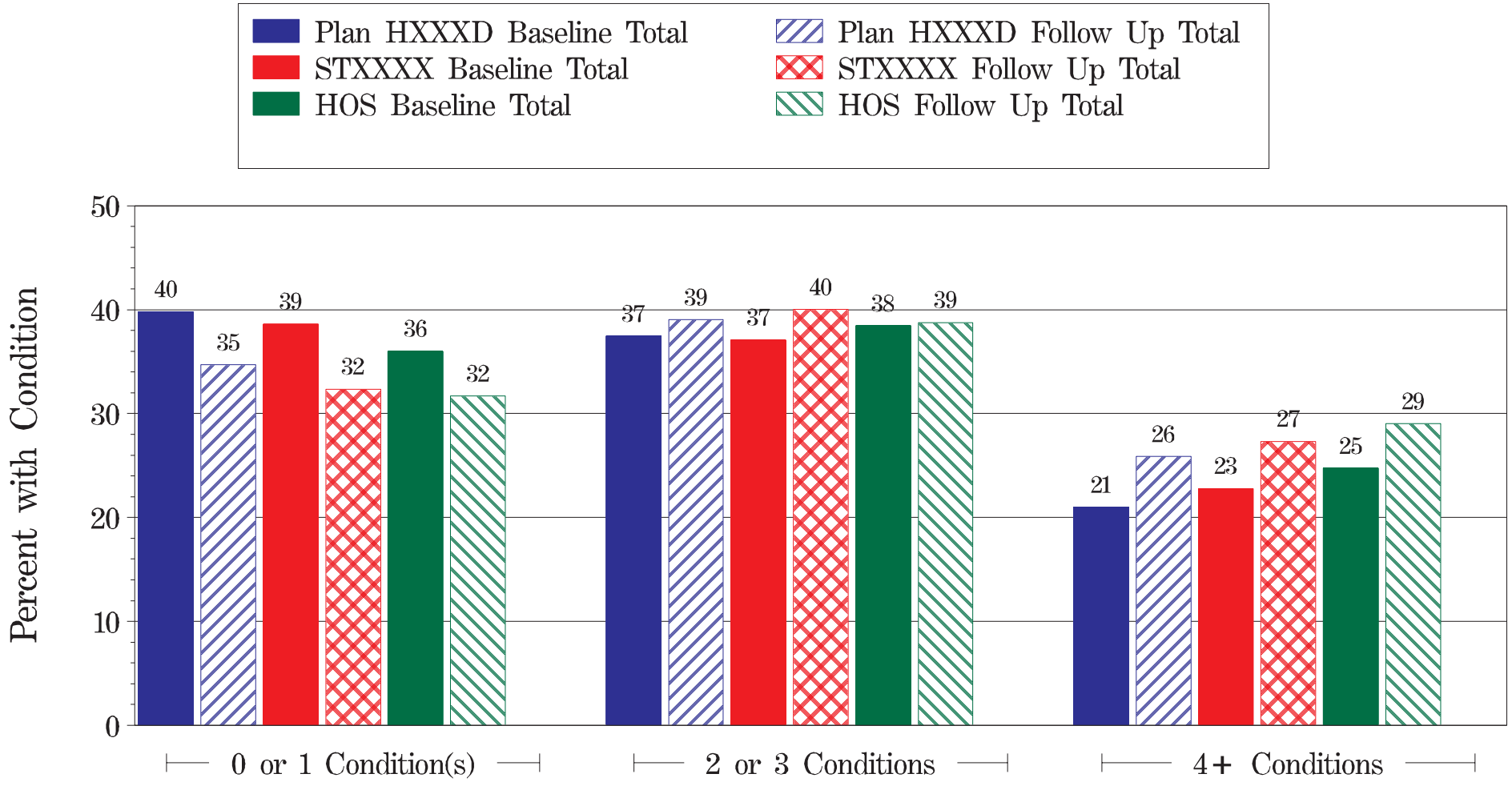
Figure 4: Percent with Positive Depression Screen for Plan HXXXD (N = 510), STXXXX Total (N = 2,031), and HOS Total (N = 71,094)



COHORT I PERFORMANCE MEASUREMENT REPORT

A beneficiary of the Medicare HOS survey is considered to have a positive depression screen when he or she answers "yes" to any of the three depression questions (numbers 38, 39 or 40). Sample is limited to those beneficiaries who are 65 or older, had a PCS/MCS score at Baseline, were in a participating managed care plan, and had a PCS/MCS score at Follow Up.

Figure 5: Distribution of Chronic Medical Conditions for Plan HXXXD (N=510), STXXXX Total (N=2,031), and HOS Total (N=71,094)



COHORT I PERFORMANCE MEASUREMENT REPORT

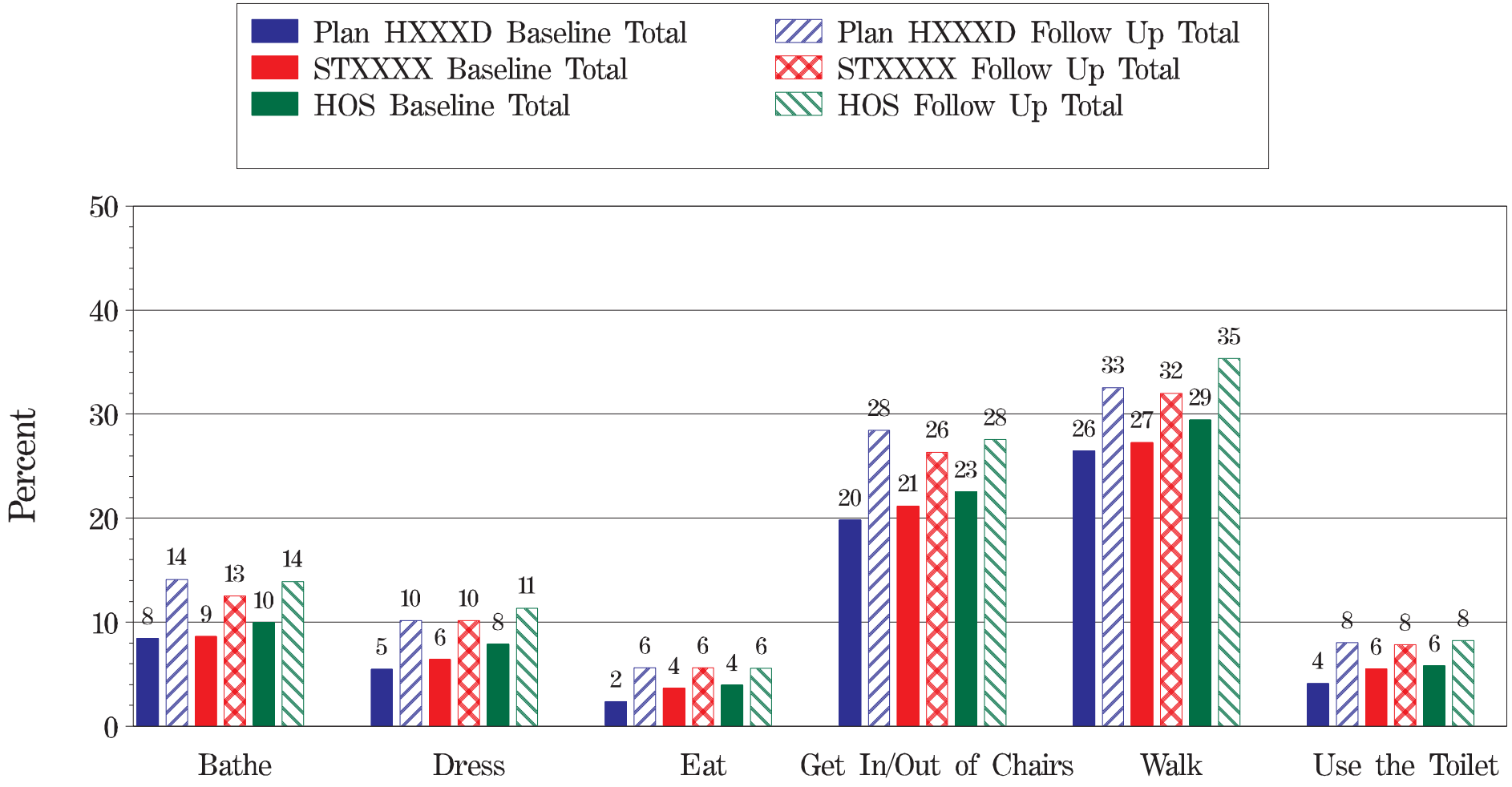
Sample is limited to those beneficiaries who are 65 or older, had a PCS/MCS score at Baseline, were in a participating managed care plan, and had a PCS/MCS score at Follow Up.

For a complete list of the chronic medical conditions please refer to page E4 of the Cohort I Performance Measurement Report.

Totals may not add to 100% due to rounding and nonrespondents to the question.

Nonrespondents to the question make up a very small percentage, in most cases less than 1%.

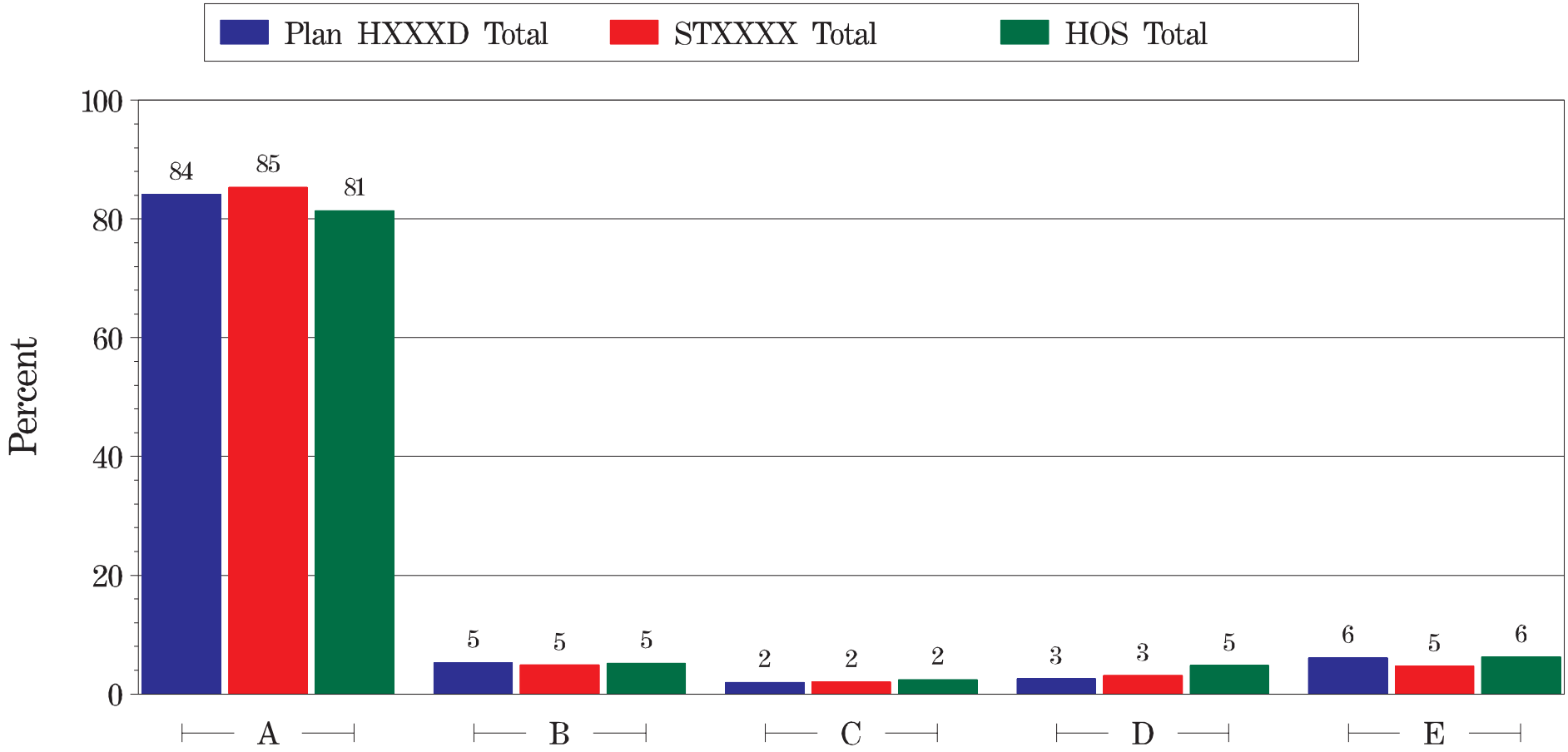
Figure 6: Percent Reporting Difficulty with Activities of Daily Living (ADLs) for Plan HXXXD (N=510), STXXXX Total (N=2,031), and HOS Total (N=71,094)



COHORT I PERFORMANCE MEASUREMENT REPORT

Responses reporting difficulty or inability to do the activity were categorized as "having difficulty."
Sample is limited to those beneficiaries who are 65 or older, had a PCS/MCS score at Baseline, were in a participating managed care plan, and had a PCS/MCS score at Follow Up.
Totals may not add to 100% due to rounding and nonrespondents to the question.
Nonrespondents to the question make up a very small percentage, in most cases less than 1%.

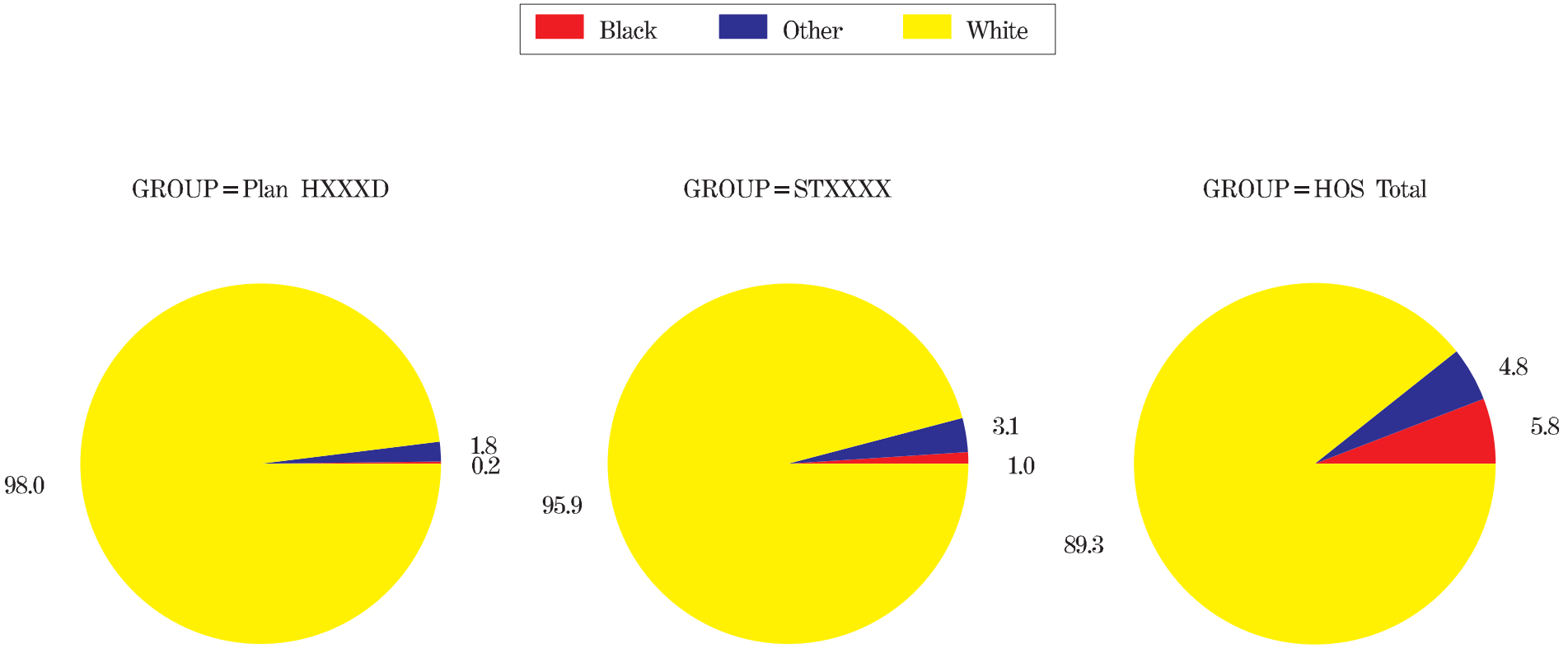
Figure 7: Person Responding to Survey for Plan HXXXD (N = 510), STXXXX Total (N = 2,031), and HOS Total (N = 71,094)



COHORT I PERFORMANCE MEASUREMENT REPORT

A = Beneficiary completed survey at Baseline and Follow Up, B = Beneficiary completed survey at Baseline and Proxy completed survey at Follow Up
C = Proxy completed survey at Baseline and Beneficiary completed survey at Follow Up, D = Proxy completed survey at Baseline and Follow Up
E = Unable to determine who completed survey at Baseline and/or Follow Up
Sample is limited to those beneficiaries who are 65 or older, had a PCS/MCS score at Baseline,
were in a participating managed care plan, and had a PCS/MCS score at Follow Up.
Totals may not add to 100% due to rounding and nonrespondents to the question.
Nonrespondents to the question make up a very small percentage, in most cases less than 1%.

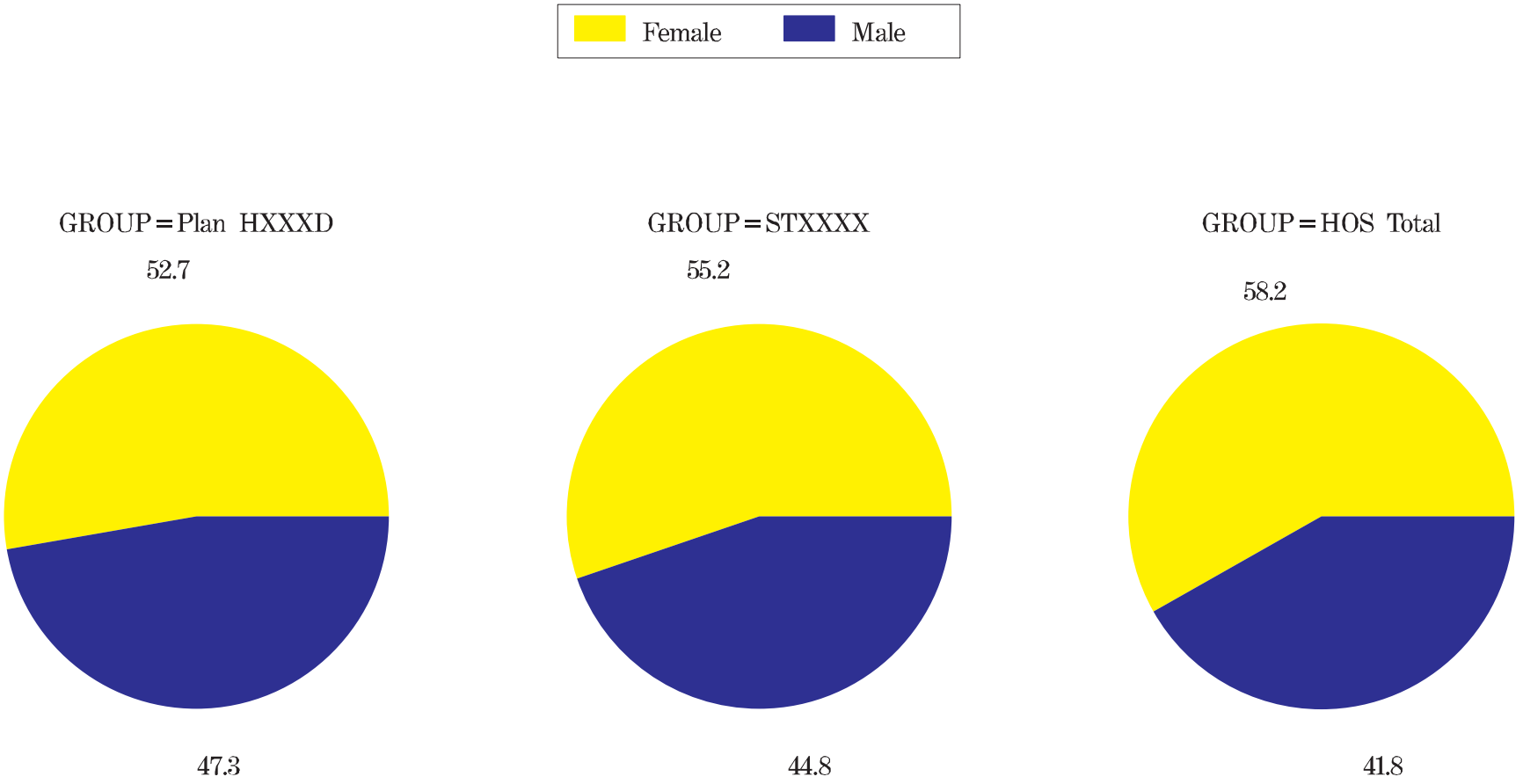
Figure 8: Distribution of Race for Plan HXXXD (N = 510), STXXXX Total (N = 2,031), and HOS Total (N = 71,094)



COHORT I PERFORMANCE MEASUREMENT REPORT

Data Source: Centers for Medicare & Medicaid Services Medicare Enrollment Database
Sample is limited to those beneficiaries who are 65 or older, had a PCS/MCS score at Baseline, were in a participating managed care plan, and had a PCS/MCS score at Follow Up.
Demographics were taken from Cohort I Baseline Data.
A very small percentage of the "Other" category can be attributed to beneficiaries being coded as "Unknown."
Totals may not add to 100% due to rounding.

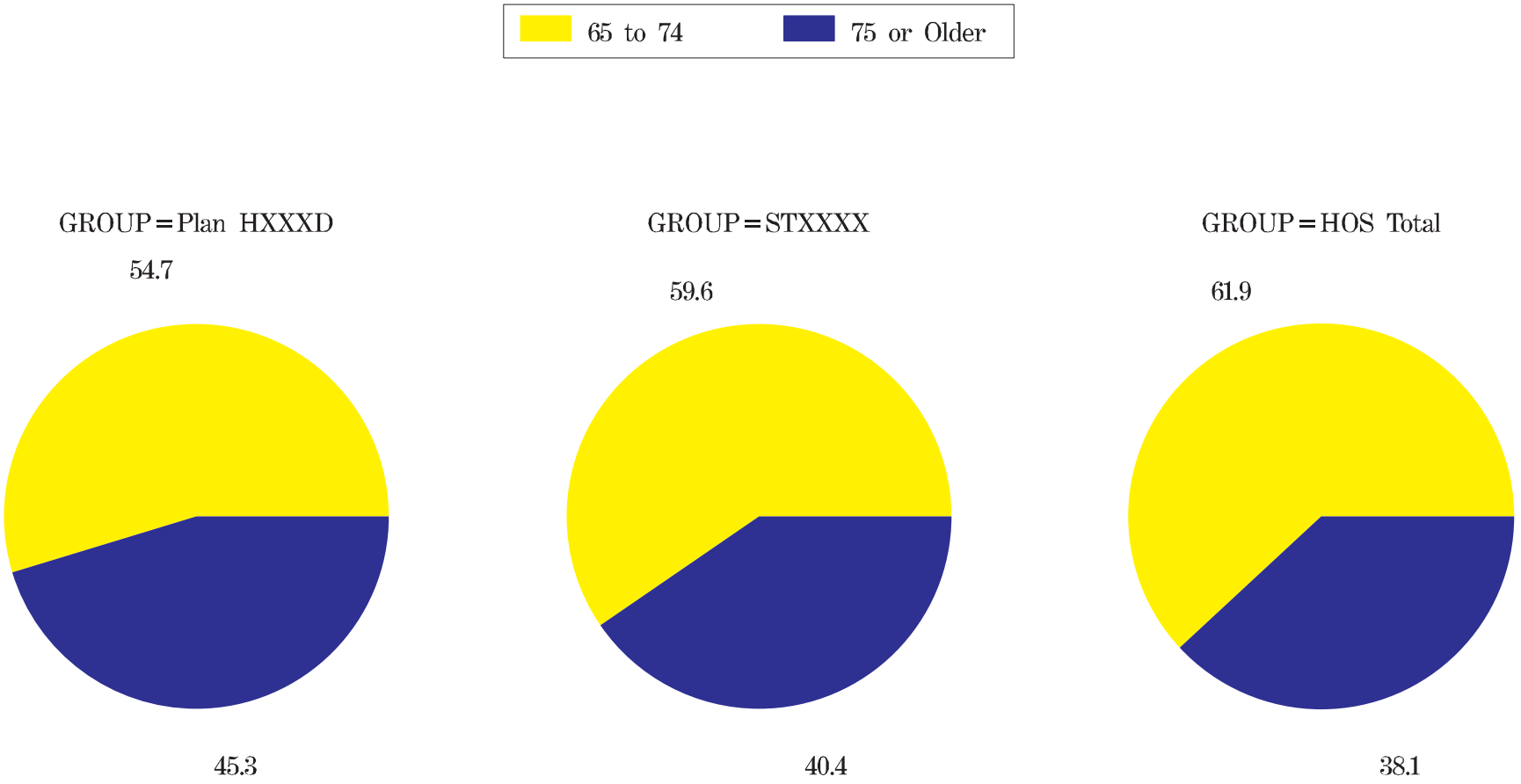
Figure 9: Distribution of Gender for Plan HXXXD (N = 510), STXXXX Total (N = 2,031), and HOS Total (N = 71,094)



COHORT I PERFORMANCE MEASUREMENT REPORT

Data Source: Centers for Medicare & Medicaid Services Medicare Enrollment Database
Sample is limited to those beneficiaries who are 65 or older, had a PCS/MCS score at Baseline, were in a participating managed care plan, and had a PCS/MCS score at Follow Up.
Demographics were taken from Cohort I Baseline Data.
Totals may not add to 100% due to rounding.

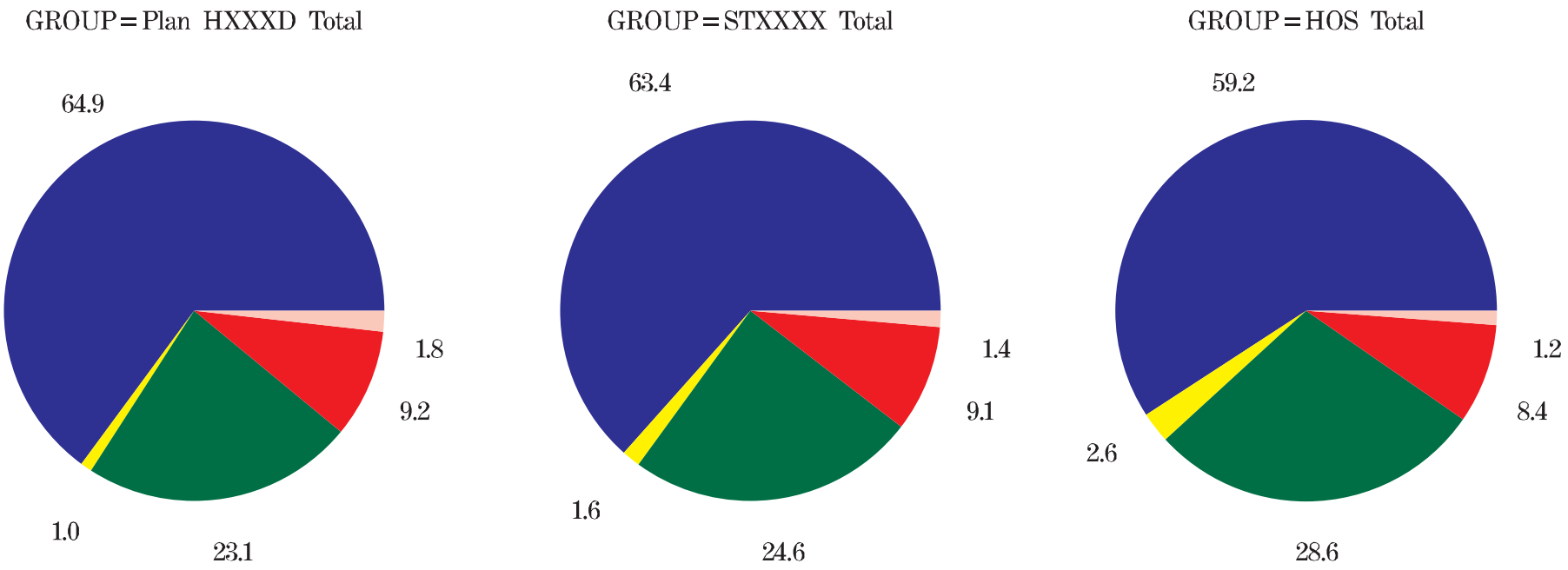
Figure 10: Distribution of Age for Plan HXXXD (N = 510), STXXXX Total (N = 2,031), and HOS Total (N = 71,094)



COHORT I PERFORMANCE MEASUREMENT REPORT

Data Source: Centers for Medicare & Medicaid Services Medicare Enrollment Database
Sample is limited to those beneficiaries who are 65 or older, had a PCS/MCS score at Baseline, were in a participating managed care plan, and had a PCS/MCS score at Follow Up.
Demographics were taken from Cohort I Baseline Data.
Totals may not add to 100% due to rounding.

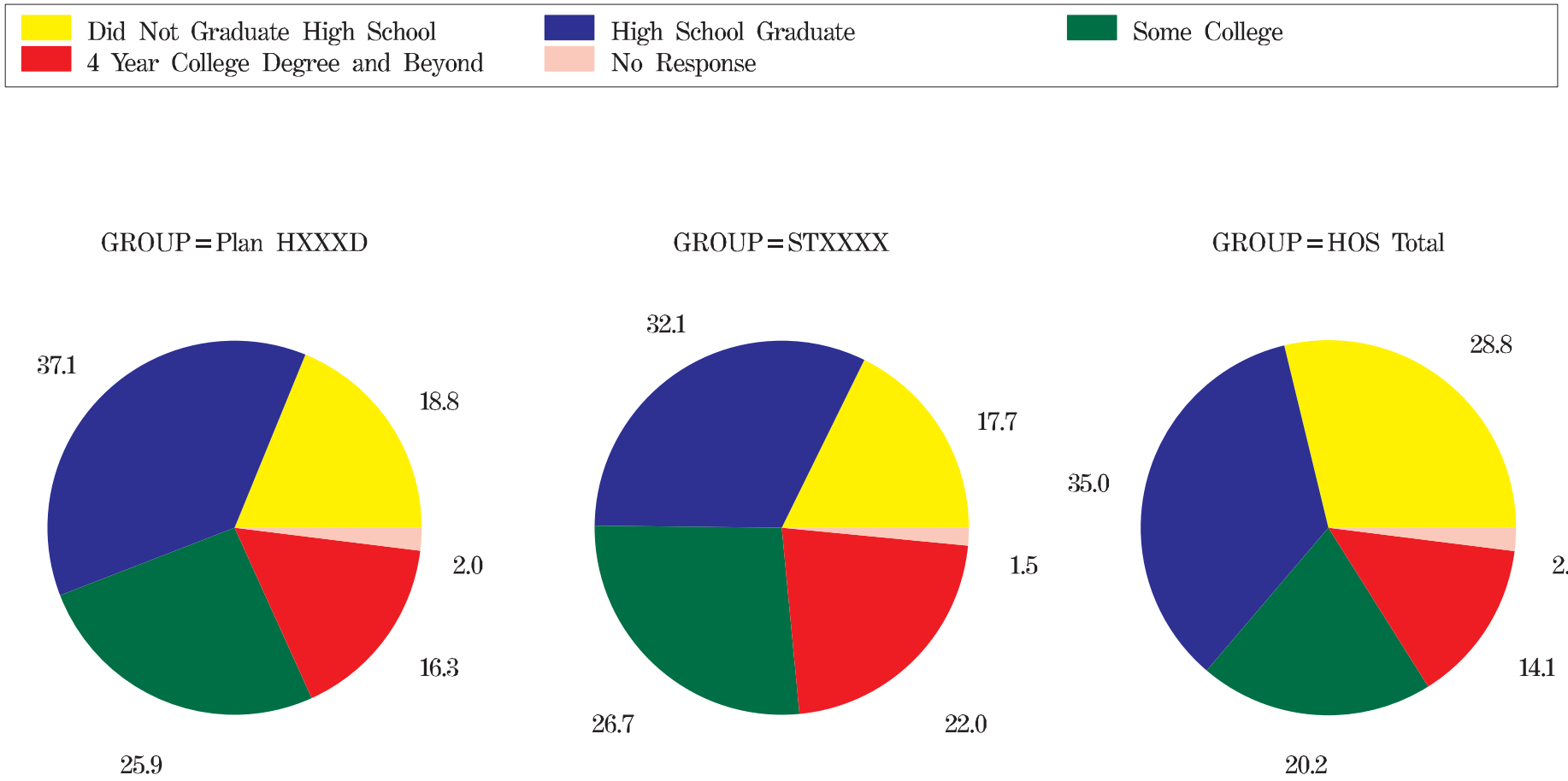
Figure 11: Distribution of Marital Status for Plan HXXXD (N = 510), STXXXX Total (N = 2,031), and HOS Total (N = 71,094)



COHORT I PERFORMANCE MEASUREMENT REPORT

Sample is limited to those beneficiaries who are 65 or older, had a PCS/MCS score at Baseline, were in a participating managed care plan, and had a PCS/MCS score at Follow Up.
Demographics were taken from Cohort I Baseline Data.
Totals may not add to 100% due to rounding.

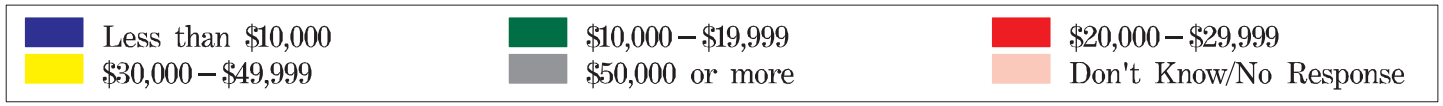
Figure 12: Distribution of Education for Plan HXXXD (N = 510), STXXXX Total (N = 2,031), and HOS Total (N = 71,094)

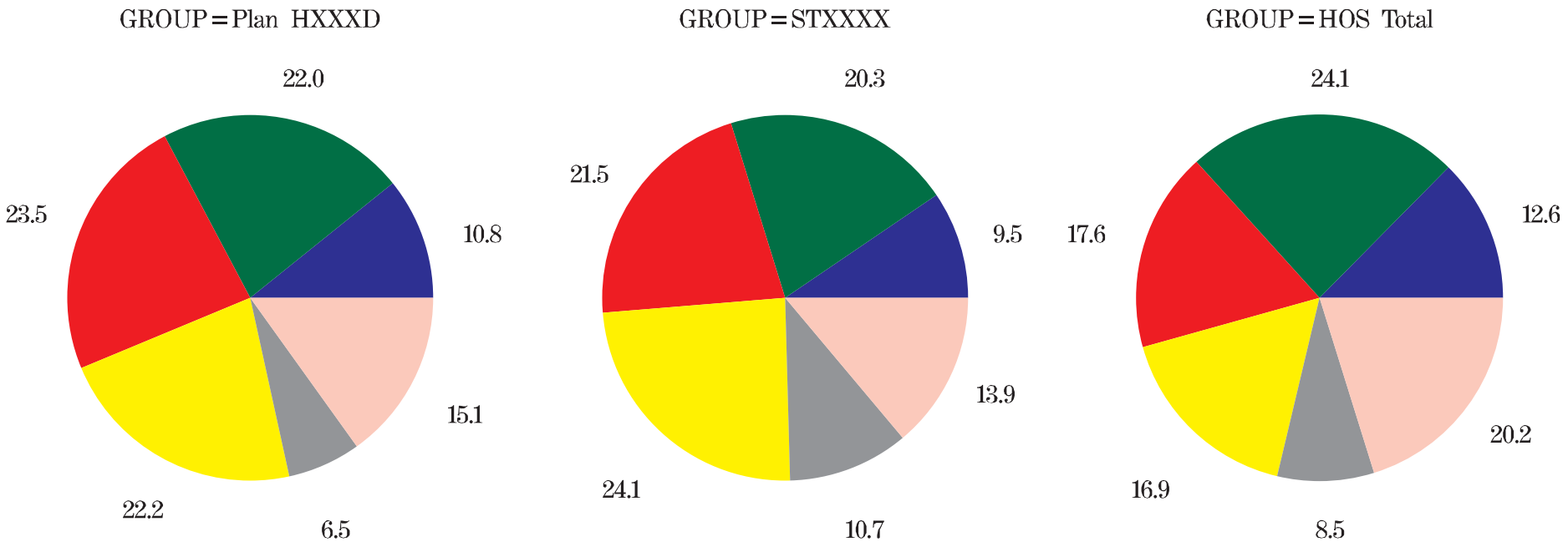


COHORT I PERFORMANCE MEASUREMENT REPORT

Sample is limited to those beneficiaries who are 65 or older, had a PCS/MCS score at Baseline, were in a participating managed care plan, and had a PCS/MCS score at Follow Up.
Demographics were taken from Cohort I Baseline Data.
Totals may not add to 100% due to rounding.

Figure 13: Distribution of Household Income for Plan HXXXD (N = 510), STXXXX Total (N = 2,031), and HOS Total (N = 71,094)





COHORT I PERFORMANCE MEASUREMENT REPORT

Sample is limited to those beneficiaries who are 65 or older, had a PCS/MCS score at Baseline, were in a participating managed care plan, and had a PCS/MCS score at Follow Up.
Demographics were taken from Cohort I Baseline Data.
Totals may not add to 100% due to rounding.